

PALEOLITHIC POLITICS

THE HUMAN COMMUNITY IN EARLY ART

BARRY COOPER



Paleolithic Politics

THE BEGINNING AND THE BEYOND OF POLITICS

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The Human Community in Early Art

BARRY COOPER

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To Brendan
On his own quest

Remember that it is not you who sustain the root; the root sustains you.

—Romans 11:18.

L'homme préhistorique ne nous a laissé que des messages tronqués.

—André Leroi-Gourhan, *Les Religions de la Préhistoire*

The reason for Paleolithic man's endeavors to construct his assemblages of symbols was that he had something to express.

—André Leroi-Gourhan, *Treasures of Prehistoric Art*

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PREFACE

This is the third book I have written that tries to apply insight taken from the political science of Eric Voegelin to a subject matter that he did not discuss. The other two dealt with contemporary terrorism and Canadian politics. Unlike with those subjects, Voegelin was actually interested in Paleolithic political symbols. At one point his interest seemed to be sufficiently robust that his students in Munich speculated "on whether he might write a volume 'zero' for *Order and History* on prehistoric orders of symbolization. Obviously he did not."[1] Why not? According to Thomas Hollweck, he was not interested in "origins" or with "prolonging our history by pushing it further back" but with corroborating "his analysis of the structure of consciousness." He found such corroboration in prehistoric symbols. "In other words," Hollweck states, "the whole [of political reality including the Paleolithic] doesn't have parts, it has a structure, just as consciousness doesn't have parts, but is a structure."[2]

Those already familiar with Voegelin's philosophy of consciousness, which we discuss briefly in chapter 1,[3] will easily understand what he found so congenial in the approach of Marie König, discussed in chapter 2. Her discussion of stone tools and images in Paleolithic "art," or of the importance of change within continuity, can be translated without distortion into Voegelin's language of compactness and differentiation of experiences and symbolizations.

Until the past few centuries, human beings lived in a world where there were far more animals than humans. It is perhaps not surprising that both portable Paleolithic artifacts and the cave walls were extensively decorated with the images of animals. One of the conclusions of this book is that the animal imagery expressed a differentiation of human and animal consciousness within the continuity of human and animal being. These very early symbols were both immediate and simple. Such "reflective

distance" (to use a later term of Voegelin) as existed would have been expressed in stories and myths illustrated by the animal images. Following Voegelin's argument, discussed in chapter 1, we would call these stories cosmological myths. The details of such stories are, however, irretrievably gone, and we are left to consider what has been called "the material fragments of the practical expression" of Paleolithic politics/religion/cosmology "if we but have the wit to interpret them."[4] Whether such an observation could apply to the "signs" also found in Paleolithic caves depends on how such phenomena are understood. At present the signs are highly understudied and, partly for that reason, their interpretation is controversial. In this book we say very little about the signs.

König also argued that the earliest and most compact symbolic forms were also the most universal, immediate, and directly apprehended. For this reason, they may have been the most arresting in terms of spiritual potency. Later symbolism, Voegelin argued, was both more differentiated and specific and thus was more accurate, in the sense that it provided a more nuanced and adequate representation of reality. This did not mean that later, more differentiated symbolisms added to the stock of human knowledge in the sense of providing additional information about reality. The very notion of differentiation for Voegelin presupposed the presence of reality in a compact and comparatively inarticulate form. Differentiation simply brought to consciousness what was already present and inchoately "known."

Voegelin discussed this process of differentiation within reality many times, especially in his later work. A particularly apt formulation regarding the problems associated with very early symbolism is found in the introduction to volume 4 of *Order and History*. Here Voegelin raised the question of why, despite the existence of more differentiated symbolism, the compact cosmological symbolism meaningfully persisted: "This peculiar structure in history originates in the stratification of man's consciousness through the process of differentiation. The truth of existence discovered by the prophets of Israel and the philosophers of Hellas, though it appears later in time than the truth of the cosmos, cannot simply replace it, because the new insights, while indirectly affecting the image of reality as a whole, pertain directly only to man's consciousness of his existential tension [toward the divine ground of being]." In conventional language, one would speak of the revelation of the hidden god

beyond or transcendent to the intracosmic gods. Voegelin's emphasis, however, was on the visionary or auditory or meditative experience of the individual who responded to this divine presence. More precisely, the individual discovered that his human consciousness was somehow also the site where divine presence was experienced. Such an individual participated in a "theophanic event," and his or her consciousness became "cognitively luminous for his own humanity as constituted by his relation to the unknown god whose moving presence in his soul evokes the movement of response. I have circumscribed the structure of the event as strictly as possible, in order to make it clear how narrowly confined the area of the resulting insights actually is: The new truth pertains to man's consciousness of his humanity in participatory tension toward the divine ground, and to no reality beyond this restricted area." That "restricted area" referred only to the immediate experience in the consciousness of the individual who responded to the theophany, thus making it an "event," which is to say, if no human response, then no event.

Of course, the human beings who underwent such experiences sometimes did not acknowledge the "narrow" or "restricted" area of reality involved, namely, their own human consciousness in tension towards the divine Ground of Being. More specifically, "the differentiation of existential truth does not abolish the cosmos in which the event occurs. Regarding its existence and structure, however, the cosmos is experienced as divinely created and ordered. The new truth can affect the belief in intracosmic divinities as the most adequate symbolization of cosmic-divine reality, but it cannot affect the experience of divine reality as the creative and ordering force in the cosmos."[5] That is, because the differentiation of consciousness occurred within the cosmos, the need to symbolize the reality of the cosmos did not disappear. What Voegelin called "the primary experience of the cosmos" and the earliest symbolization of it were never superseded by the later forms, including revelation and philosophy. In one sense this was self-evident: the earliest symbolic forms constituted the context or background in light of which all subsequent differentiations took place. If later symbolizations were in some sense an advance, this did not abolish the need to understand what they have advanced from.

In his extensive history of religion, Robert N. Bellah made a pertinent observation regarding this problem: "Given that 'we' are the product of all previous human culture, we have, at some

level ‘already’ experienced those gods, as we have ‘already’ experienced the powerful beings of tribal peoples. If we are truly to understand ancient Egyptian religion (or any religion), it will be part of our task to ‘remember’ what we have forgotten, but which in some sense we already know.”[6] Bellah’s term, which was cognate with Voegelin’s differentiation, was the acquisition of “new capacities.” This acquisition did not imply any kind of progress so much as a different way of responding to “fundamental anxieties,” to use a term that Bellah borrowed from Alfred Schutz.[7] For Voegelin, the fundamental anxiety, as we also discuss in chapter 1, arose from the human experience of the mystery of existence out of nothing.

In conventional terms, this book is a cross-disciplinary study, which raises a preliminary question: Why would political scientists, especially those familiar with the modern political science established by Voegelin, be concerned with what is conventionally referred to as prehistoric humanity? The adjective “prehistoric” is not the best. To begin with, it is a nineteenth-century French philological barbarism, like “sociology.” Even so, and ignoring its status as a linguistic mongrel, the term “prehistory” does seem to be a necessary starting point. Prehistory can be distinguished from history by the existence or nonexistence of literary documentation. Given that literacy has been absent from some societies until quite recently, we have an obvious problem that prehistory ends at different times in different places.[8] Political scientists usually deal with texts. The absence of texts from the Upper Paleolithic means we must rely on the evidence unearthed (sometimes literally) by archaeologists. André Leroi-Gourhan, one of the great archaeologists of the twentieth century, whose work is discussed in chapter 5, would occasionally refer to “the book of the earth” as the objective of his investigations. But he would add that this book had many missing pages and few complete sentences. Such a book was even more unusual in that it could be read one time only: once one layer or page has been documented, it had to be destroyed in order to examine an earlier page. One of the results was almost Socratic: the deeper the archaeologist digs, the more he or she must destroy. This means that often the deeper archaeologists dig, the less they know—at least as compared to what they thought they knew before they started. Time and again we see in this book how one grand theory has been replaced by

another. Optimists might call this the progress of science.

Those with a more realistic disposition might wonder if the entire enterprise of archaeology and other paleosciences is a grand waste of time. To my mind such defeatism goes too far, but it does reinforce the urgency of the question: What is it that archaeologists do that might be relevant to political science? According to one contemporary school, the goal of archaeology "is to resuscitate deceased culture" by "interpreting their material remains and artifacts."[9] Such an approach seems promising because it allows contemporary human beings to say something meaningful about the extensive phenomena connected to preliterate human existence. Of course, matters are never so simple: historians of archaeology usually distinguish between classical archaeologists and those interested in prehistory—in German, *Archäologie* refers to the former only; the subject matter of prehistoric archaeology is usually referred to as *Urgeschichte* or *Frühgeschichte*. Prehistorical archaeology developed from early modern antiquarianism and was initially mixed up with speculation on such matters as dating the Great Flood and the origins of specific national and ethnic groups. Thus the subject matter relevant to political science must be further distinguished from what is of concern to archaeologists, who, like political scientists, are divided into different schools and approaches anyhow. With all the qualifications implied in the foregoing paragraphs, and notwithstanding Hollweck's remarks concerning Voegelin's interest in Paleolithic symbols, one purpose of this book is, indeed, to push the subject matter of political science further back into the past.

Ofer Bar-Yosef, a distinguished Israeli archaeologist, provided another justification for cross-disciplinary research: "You can't remain a worm in your own turnip," by which he meant you can't even know your own turnip unless you find another one.[10] Voegelin certainly moved from his own turnip, which initially was the study of the law, first to political science and then to philosophy of history and philosophy of consciousness, which turned out to be constituents of his understanding of political science after all.

In the present context, moving to another turnip, or perhaps to an apple or a pear, meant to visit archaeological sites in Europe and North America—so far I have been unable to visit sites elsewhere in the world. Mostly, however, moving to another turnip meant having to read a great deal of material, in this case

in archaeology, paleoanthropology, and more generally in "paleoscience." Initially, such reading as I undertook was rather indiscriminate, and I am quite confident that archaeologists, should they happen upon this book, will say I didn't read enough. Nevertheless, no one can read everything. In the event, it took some time before I could develop a sense of context and so an understanding of what in paleoscientific literature might be relevant to political science. Most of this material was interesting enough, but I was often surprised at the ease with which many paleoscientists ignored or otherwise evaded what seemed to me to be important philosophical issues.

In this context, Ian Morris, an archaeologist, told an illustrative story. When he was a graduate student, he took a seminar from Ernest Gellner, who had recently left the chair in philosophy at the London School of Economics to become professor of social anthropology at Cambridge. After listening to a talk by Christopher Tilley, also an archaeologist, Gellner said, "They tell me you're a good archaeologist; so why are you trying to be a bad philosopher?" Morris explained, "Archaeology has unavoidable philosophical implications, and until such time as good philosophers take archaeology more seriously, archaeologists have little choice but to become bad philosophers."[11] *Mutatis mutandis*, the same might be said of archaeologists and political scientists.

Here is an illustration of what I mean. The Boston Museum of Fine Arts houses a fairly large painting by Gauguin. In the upper left-hand corner is its title, "D'où Venons Nous/Que Sommes Nous/Où Allons Nous."[12] Many paleoscientists ignore the second and third questions and think the first can be answered on its own—by history, biology, and eventually by physics. For Gauguin, as for Bellah, Voegelin, and Gellner, and in general for political science, the three questions form a whole, a unified complex of questions that do not admit of an answer. So as not to leave a false impression, the most interesting archaeologists and anthropologists I have read understand this perfectly well.

A persistent theme in this book is tributary to a widespread observation by paleoscientists, namely, that Upper Paleolithic human beings were as cognitively competent as our contemporaries. It is unclear in many instances whether such a remark was just a nod in the direction of conventional egalitarianism or was a kind of metaphysical statement. In chapter 1 we examine the sense in which this assertion is true. In

so doing, we provide the outline of what a philosophical anthropology entails. The point of the exercise is to indicate the kind of enquiries that must be raised in answering a fundamental question: What sort of being is human being? In what sense were Upper Paleolithic Cro-Magnons or even Neanderthals human in the sense that we are human?

The assumption I am making here, an assumption I believe is foundational for political science, is that the purpose of political science is to become aware of the fundamental questions regarding political order. The point of philosophical anthropology therefore is not to provide answers to the questions posed at the close of the preceding paragraph, and even less to provide *the* answer. In the chapters that follow, we will have occasion to draw attention to assumptions made by paleoscientists that seem to provide answers but in fact do not.

The form of the text in this book is a narrative essay rather than a report, a meditation, a poem, or a treatise. It is not intended to provide new information, though much of what follows may well be news to normal political scientists. Obviously I am not a "dirt" archaeologist even though I have visited a good number of remote rock art sites and not a few dank caves and rock-shelters. This particular essay in book form provides an interpretation of the work of others, starting with Marie König. Apart from a handful of Voegelin scholars, she is unknown beyond the rather narrow world of German feminism. And yet she raised some questions of genuine interest to political science. Her ability to do so, moreover, is connected to her status on the margins of academic life. More generally, by adopting an approach centered on narrative, we look at specific persons whose individual stories carry meanings. This is why, for instance, we mention that Marie König was best known as a German feminist, André Leroi-Gourhan as a *maquisard*, and Jean Clottes as an *haut fonctionnaire*. Their stories are inseparable from their biographies.

In other words, despite devoting two chapters to the work of several major French archaeologists and paleoanthropologists of the past few generations, we are concerned less with the "progress of prehistoric studies" than with the often idiosyncratic contributions to what political scientists might make of an ongoing story of paleoscience. Others—Michel Lorblanchet and Norbert Aujoulat come immediately to mind—could have been added to the French story, but, so far as I can see, they are

significant for our purposes chiefly for moderating the excessive and eccentric claims of their colleagues or for recovering the centrality of fundamental questions of space and time in the context of archaeology and prehistory that had been neglected.

Although we discuss narrative in detail in chapter 1, it is important at the outset to stress that it is a form of rhetoric, not science or knowledge. As Bellah said, "The truth of a narrative . . . does not arise from the 'correspondence' of its words or sentences to 'reality,' but from the coherence of the story as a whole. Just as a poem cannot be paraphrased conceptually without irreparable loss, neither can such narratives be."[13] In other words, narrative does not argue or demonstrate, it persuades. In that sense it is pretheoretical or even prescientific. And yet it also guides and contextualizes argument, knowledge, and science. As we shall see as the paleoscientific narrative unfolds, there are several occasions when the paleoscientific rhetoric exceeded what was actually known. It would be naïve to think that the same thing never occurred in political science. Reference to the decorated caves and other rock art is not intended to be a sample or epitome of something but "an instance of something, a case in point. . . . Examples instruct, they do not prove."[14] We have reproduced (or provided links to) a few of the images discussed in the text. Nearly all these examples are well known and can be found easily enough on the Internet or in any number of lavishly illustrated books on paleoart, many of which are listed in the bibliography.

I mentioned above a couple of distinguished French archaeologists whose work I did not examine in detail. Indeed, there are notable British, German, and American paleoscientists whose excellent work appears in this study mainly in footnotes. There are also several questions that I did not consider. The two major ones involve the interpretation of Upper Paleolithic signs and the very broad area covered by paleoastronomy. Regarding the first, about all one can say with confidence at present is that they meant something to those who made them.[15] Regarding the second, since this book is the first of two on prehistoric political science, and because astronomy is central to the megalithic monuments of the Neolithic period, we can postpone consideration of the second problem. It would seem, however, that whatever sense one makes of the later artifacts and symbolism, they were likely to have been rooted in the Upper Paleolithic. The problem is that, even if one can draw a plausible

link between, say, the aurochsen of Lascaux and a constellation of stars, there are so many stars to choose from that, if one takes enough care, it is possible to outline nearly anything.[16] This commonsensical word of caution has been formalized mathematically as Furstenberg's multiple recurrence theorem, according to which, with a large enough collection of possibilities, such as heavenly bodies, any pattern whatsoever can be discovered. The Neolithic astronomical megaliths reduced the range of possibility considerably.

Research for this book has been fun. You can't—or at least I can't—say that about very many projects. Writing is always enjoyable, but undertaking the preliminary work for this study was nearly always a treat. Glade Hadden, an archaeologist, said that "for me, the thrill of discovery is the juice," not picking it up or putting it in a museum.[17] On a number of occasions, in the Fontainebleau forest, rural Ireland, or West Texas, coming across a poorly described or hidden site did indeed provide the juice. I consider myself fortunate indeed to have had such experiences.

First of all I must thank the Donner Canadian Foundation and the Social Sciences and Humanities Research Council of Canada for picking up most of the tab. I must also thank my wife, Denise Guichon, and daughter, Meg Cooper, who accompanied me on several exciting rock art hunts. Jessica Weber has been an exceptional research assistant; Camilo Gil Gonzales helped with some Spanish sources. Colleagues at the Eric Voegelin Society and the American Political Science Association have provided intelligent audiences in front of whom I developed many of the arguments presented in the chapters that follow. Audiences in Madison, Baton Rouge, Lethbridge, Cologne, Munich, Baltimore, and Washington have also provided attentive if sometimes bewildered audiences, as have my colleagues at the University of Calgary.

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collection. The diligent staff in the Interlibrary Loan office at the University of Calgary have been consistently helpful in acquiring material, as have librarians at Stanford, University of British Columbia, and UCLA. Alain Bénard, of the Groupe d'Étude de Recherche et de Sauvegarde de l'Art rupestre (GERSAR) in Milly-la-Forêt, showed me several of the well-hidden rock-shelters in the Fontainebleau forest. For their helpful conversations on various aspects of this project I would like to thank Paul Bahn, Jodi Bruhn, Paul Caringella, Jean Clottes, Michael Franz, Thierry Gontier, Don Johanson, Wolfgang Leidhold, Geneviève von Petzinger, Brendan Purcell, Tilo Schabert, and David Walsh. At the University of Notre Dame Press, I must thank Eli Bortz and Matthew Dowd for their helpful suggestions, and Scott Barker for his splendid copyediting. I'm sure there are others I have neglected, and for which neglect and forgetfulness I apologize.

PART I

A Voegelinian Prelude

CHAPTER 1

Paleoscience and Political Science

In the last decade or so of his life, Eric Voegelin developed an interest in very early political symbolism, the symbolism of persons living in what we conventionally refer to as the Stone Age or the Ice Age. In a sense, Voegelin was simply pushing his interest in *Altertumswissenschaft* into ever-earlier societies. Long before the agriculture-based cosmological empires of the ancient Near East discussed in volume 1 of *Order and History* were the Neolithic societies. These were increasingly sedentary social and political groups consisting of villages and towns, initially confined to western Asia, Anatolia, and the Levant. Antedating the European and Near Eastern Neolithic societies were the several hunter-gatherer or foraging societies of the Upper Paleolithic (50–12 KYA).[1] Toward the end of the Upper Paleolithic, sometimes called the Mesolithic or Epipaleolithic, depending on the area of Eurasia being discussed, an increase in sedentism was often accompanied by a transition from hunting and foraging to domestication of animals and plants. Whenever the transition began—and the evidence suggests it took place at different times in different places—the focus of this book is on the earlier "pretransition" period.

Such a focus introduces several qualifications in time and space to our analysis. First, our focus is chiefly on Europe. We make this limitation because (1) when Voegelin was interested in the Upper Paleolithic and Neolithic during the later 1960s and 1970s, much less was known of contemporary developments in Asia and Africa; and (2) to attempt to integrate the recent African and Asian discoveries with European ones would greatly lengthen

an already long study but add little to the theoretical problems of interest to political science. Furthermore our concern is with European symbolism rather than the economic or, broadly speaking, the material changes in Upper Paleolithic societies. We will, of course, discuss in passing such questions as changes in climate and economic and technological strategies, but the focus of this book is on the symbolic life of very early European humans.

The structure of this "Voegelinian prelude" is straightforward. In the next section we consider the central place of narrative in contemporary archaeology, paleoanthropology, and the other paleosciences upon which political science must rely for evidence. Narratives raise problems that paleoscientists conventionally discuss in terms of "nature" and "culture." Accordingly, the second section, "Nature and Culture," deals with this question. We argue, however, that the problem of nature and culture raised theoretical or philosophical questions that, in the context of paleoscience and the subject matter of anthropogenesis, could be personified by Kant and Darwin. Kant's arguments in particular introduced the categories of philosophical anthropology, which we discuss in the section titled "Philosophical Anthropology." From Kant's day to the present, philosophical anthropology has been a central element in modern political science.[2] Central to Voegelin's philosophical anthropology was the concept of the compactness and differentiation of consciousness. He began to apply this distinction to the very early political symbolism of Europe following his encounter with Marie König (discussed in chapter 2). In short, the argument regarding the relationship of paleoscience to political science was not too dissimilar to that of history and political science. As Aristotle said, history discussed "singulars," which is to say contingent events, individuals, and their stories. In this respect it was less philosophical than poetry, which, as philosophy, is more concerned with universals (*Poetics* 1451a36–b11). Both paleoscience and political science are constituted by narratives, but the narrative of political science also aimed to reflect on narrative as such. Political science to a greater extent than paleoscience requires a philosophical and also a social anthropology.

Brendan Purcell is one of the few scholars who has written on the question of human origins who has also discussed the necessity of discussing philosophical anthropology. The reason for the centrality of philosophical anthropology is almost self-

evident: we have to sort out what we mean by "human" so that when we discuss the question of human origins we have some notion of what we are looking for.[3] Early in his 1966 book, *The Drama of Humanity*, a title that evoked a series of lectures given by Voegelin in 1967,[4] Purcell drew an epistemological distinction between natural science and philosophy. The former, he argued, was "the systematic asking of questions and seeking of verified answers within the various domains of data in the material world," whereas the latter was "the systematic asking of questions and seeking of verified answers both with regard to the nature of inquiry as such, as well as with regard to the content of all inquiry from the viewpoint of existence as such."[5] In light of that distinction one might say that paleoscience rested on certain assumptions that could be made more or less explicit, but that this science or complex of sciences did not raise questions of a philosophical nature. If, inevitably, questions of a philosophical nature nevertheless arose, they were usually qualified as speculative extrapolations based on limited paleoscientific evidence.

Narrative and the Problem of Species

Narrative constitutes a bridge between philosophical anthropology and the less reflective but more empirical discourse of paleoscientists. Narratives are stories, and, as Hannah Arendt observed, stories are a privileged means to convey meanings.[6] Alan Barnard argued that "the ability to tell a story, to narrate, is an important part of what it means to be human."[7] A common paleoscientific narrative, for example, concerns the transition between, or replacement of, late archaic humans, chiefly Neanderthals, and (or by) early modern humans, sometimes called anatomically modern humans or Sapiens. The paleoscientific evidence is enormously complex and increases with almost every scholarly publication on the subject matter, but to be meaningful the data depend on the narrative into which the evidence is woven. As Wolpoff whimsically observed, "Data does not speak for itself. I have been in rooms with data, and listened very carefully. The data never said a word."[8] The larger story this book aims to tell concerns the genesis of human being as storytelling being. Central to this story is the production of what we conventionally call art.

Like all stories, the discussion of stories aims to be persuasive

because it gives a plausible account of evident realities. Sometimes paleoscientists with deeply positivist commitments borrow from Kipling and call such efforts "just-so" stories. To persons who are quantitatively inclined, one might point out that the plausibility of a narrative can also be expressed in terms of what the French mathematician Henri Poincaré called a spectrum of probabilities. That the accounts of Neanderthal-to-Sapiens history or of Upper Paleolithic documentary production, especially the production of "art," whether parietal (cave) art or mobiliary (portable) art, also convey an intelligible meaning ensures these stories are not simply fiction.[9] The problem, which recurs throughout this book, is to describe the grounds for stories of historical anthropogenesis.

We begin with a simple example. In the preface to his book on hunting, Matt Cartmill wrote: "This book is about the connections that various people have tried to draw between hunting and being human. It deals above all with the hunting hypothesis of human origins, which is the story of how some apes became human when they took up weapons and began to kill. The killer-ape story has roots in older tales, and so this book is in part a literary history. But it is also a book about science, because scientists have been the chief tellers of that story."[10]

Although the story of "man the hunter" has been widely criticized,[11] Cartmill was certainly correct to emphasize the importance of paleoscience as storytelling, and that, in effect, scientific hypotheses were plotlines. Cartmill was not, however, the first to recover the approach of an earlier archaeological tradition.[12] A couple of years earlier, Misia Landau developed a "general theory" of paleoscientific narrative. For Landau, *any* account (even physics) of a sequence of events that manifests a meaning is a narrative. This commonsensical identification of narrative and story is clearly distinct from specialized postmodern uses of the term. With respect to the present problem, Landau wrote that "every paleoanthropological account sets out to answer the question: what really happened in human evolution?" And they all address terrestiality, bipedalism, encephalization, and the development of technology, politics, and religion—though not always in the same order.[13] Paleoscientific analysis and common sense would conclude that questions concerning bipedalism and encephalization are scientific in the conventional sense of the term. Landau argued that the scientific accounts also constitute a meaningful story. And the plausibility

and persuasiveness of the scientific account depends on the plausibility and persuasiveness of the story of which it forms a part. Science, as Aristotle said, also relies on rhetoric.

The usual evolutionary story is that (1) the nonhuman primates were relatively safe, usually because they lived in trees; (2) one of them was somehow different from the others, which introduced the "hero" of the story; (3) the hero was dislodged because of environmental or other changes; and (4) left the safety of the trees and departed on a new terrestrial adventure where (5) the hero was tested and triumphed, which was explained by (6) the "guidance" of Darwinian natural selection or an equivalent factor or force that (8) transformed the hero from primitive animal to civilized human so that (9) the hero could be again tested and again triumph, even though his or her triumph was accompanied by anxieties that summoned further action, generally referred to as "culture."

Readers of Voegelin's work written during the 1950s and early 1960s will find Landau's account of the anxious hero a familiar one. In *Israel and Revelation*, for example, Voegelin introduced the imagery of human existence as participation in a mysterious "drama of being" that was illuminated only by consciousness, and then only partly. As he put the matter there:

> At the center of his existence man is unknown to himself and must remain so, for the part of being that calls itself man could be known fully only if the community of being and its drama in time were known as a whole. Man's partnership in being is the essence of his existence, and this essence depends on the whole of which existence is a part. Knowledge of the whole, however, is precluded by the identity of the knower with the partner, and ignorance of the whole precludes essential knowledge of the part. This situation of ignorance with regard to the decisive core of existence is more than disconcerting: it is profoundly disturbing, for from the depth of this ultimate ignorance wells up the anxiety of existence.[14]

Moreover, the "process of symbolization" never dispels the anxiety of existence no matter how adequate it becomes as an expression of experienced reality. The reason is simple: the more adequate the symbolization, the more aware humans become that they are participants in a "cloud of unknowing," to use another familiar enough symbol. That is, the clarity that comes from more adequate symbolization does not clear up the mystery of

participation so much as render it more intense. Voegelin remarked in an essay from the late 1960s, “Anxiety is the response to the mystery of existence out of nothing. The search for order is the response to anxiety.”[15] Narrative in this context was one expression of the search for order. There is, in other words, an order to the sequences of paleoscientific narratives just as these same paleoscientific narratives expressed a search for another order, namely, a meaningful answer to the question, “What really happened in human evolution?”

The first problem, the discussion of the sequence of paleoscientific narratives, is relatively straightforward. “Creating narratives,” Rosemary Joyce wrote, “permeated archaeology from the initial moments of investigation of sites through to the production of texts,” which meant something more than “written materials.” Archaeological storytelling both expressed insight and knowledge and constituted an archaeological community—and, indeed, more broadly, a scholarly community. “Narrative in a broad sense,” Joyce continued, “is constitutive of archaeology. The writing of archaeology begins long before an author puts pen to page. . . . Telling ourselves stories as we engage in primary research, we construct already narrativized knowledge, which then appears more natural in its transcription in written texts.”[16]

A more interesting question concerns the narratives that try to account for “what really happened in human evolution.” Of course, one can simplify the story. For example, said Landau, “the dominance of Cro-Magnon over Neanderthal, like the struggle between two brothers, which occurs in folktale and myth, may represent the triumph of virtue over turpitude.”[17] Indeed, until recently that was precisely how the “triumph” of migrants from Africa to Europe was presented.[18] Neanderthals, however, have always been in a curious position: until very recently the descendants of the African invaders, modern Sapiens, including thee and me, were unsure whether the ones they “displaced” (to use a conventional euphemism) were human or not. Today, on the basis of biology—Neanderthals and Sapiens interbred—and also on the basis of morphology, paleoscientists mostly agree that we all belong to the same species.[19] Treating Neanderthals and Sapiens as distinct “lineages,” as has sometimes been done, does not usually resolve the issue because the relationship of biological to anthropological categories typically is not addressed by paleoscientists.

Nor does the current general agreement among paleoscientists

dissolve the problem. It is still not clear whether Neanderthals and Sapiens are defined by different combinations of unique traits or by unique combinations of different traits. And it is even less clear what is meant by a trait.[20] The reason for this essential ambiguity can be specified: for biologists, evolution is understood to be a continuous process, which may or may not conclude with Sapiens, but taxonomy divides this process into discontinuous categories. Accordingly, the two are incompatible. This is especially true "with reference to fossil materials, where the only biological characteristics available for study are the morphological traits of scarce fossils," which raises a problem of interest to political science.[21]

The theoretical issue concerns the status of species. In the 1859 edition of *The Origin of Species*, Darwin wrote, "I look at the term species, as one arbitrarily given for the sake of convenience" and as not essentially different from "variety," which "is also applied arbitrarily, and for more convenience." Marjorie Grene and David Depew quote this remark, and they comment: "Surely these are fighting words." Darwin seemed to deny existence to the subject matter of the book, namely, species: "If the term species is arbitrary, what are naturalists doing when they make distinctions between specimens that seem related or unrelated, and when they worry about whether certain forms represent good species or are merely varieties? What, indeed, was Darwin himself doing during the *Beagle* years, or afterward, when he asked specialists in London to look into the sorting of his specimens?"[22] In response to such remarks the following questions have arisen: Are species real? If so, what is their ontological status? Is it a class or an individual matter? Are species really conventional or genuinely natural? To see the significance of such questions in the context of contemporary Darwinian orthodoxy, we must look at some pre-Darwin arguments.

For Aristotle (*History of Animals* 588b4–22), for instance, "chance" could govern some reproductive events, but on the whole, kinds of things stay put and even constitute a stable hierarchy. With Christianity, so long as it was accepted that God created animal species at the beginning of the world and enabled species to generate, beget, or bring forth their own kind, there were no reasons to look for internal causes of an individual's characteristics. God, creator of the world, was sufficient because God also intervened at each act of procreation. When this belief,

story, or myth died, which is to say, was no longer accepted as true, the permanence of species also became questionable. As a transitional solution to an end of the notion of an absolute divine origin, Georges-Louis Leclerc, Comte de Buffon (1707–88), argued that species referred to a single genealogically connected chain so that organisms might come to an end but they could not change into another. However, Buffon also argued that the succession of generations did not have a beginning. There was simply an infinite regression without an origin so that divine creation was effectively replaced by the notion of infinity. Buffon integrated natural and human on the Cartesian premise that divided the material and spiritual parts of human being, but he added some peculiar qualifications, such as limiting his concern to adults in order to avoid having to consider the problem of aging, becoming, and history. For him, humans simply are.

These oddities were symptomatic of a larger difficulty that was brought to light by a first-rate philosopher, Immanuel Kant. Without going into too much detail,[23] Kant provided the most thorough and successful argument against both the reductionist construction of materialist physiology and the study of human bodies as biological organisms. His chief interest was in the concepts used by naturalists to study nature rather than in the study of nature itself. He was, after all, a philosopher, not a naturalist. The argument, very simply, was that, notwithstanding the emphasis of naturalists that they were interested only in physical explanations and essentially atemporal matters of taxonomy, they were in fact compelled to deal with teleological judgments regarding the subject matter of life, and, therefore, of natural history. Before Kant, and most notably in La Mettrie's *L'Homme machine* (1748), the author argued that living things were just superior artifacts.[24] Kant, however, argued that living things were examples of "natural purposes." That is, they were entities so organized that they could not be explained by way of the "if-then" principle of causality that applied to material nature. By the same token, we could not know if living things were organized "on purpose," which is to say, purposely, rather than purposively or purposefully. All one could say was that organisms appeared to have "natural purposes" whereby each part was reciprocally end and means to every other part, which is why sick organisms can heal themselves but broken machines do not.[25] The problem recurs in the contemporary argument of Hans Jonas that we consider in the next section.

Returning to the question of why Neanderthals and Sapiens could be considered distinct species, both narrative and philosophical issues were involved. Maciej Henneberg, for example, argued that both the question and the answer were elements of a historical story rather than a biological or morphological one. The historical factors involved included the following:

> (1) The fact that the first finds of scientifically described Pleistocene human remains occurred in nineteenth-century Europe because of the development of science at this time on this continent, (2) that Europe in the Pleistocene was a geographical area that promoted particular adaptations because of its climatic factors and geomorphological configuration, and (3) that Neandertal morphology was clearly different from that of modern Europeans. Thus, about 100 years ago a separate taxonomic category for Neandertals was created, and every new hominin fossil was assessed as being either "in" (the Neandertal group) or "out." Since the simplest way we can evaluate a fossil human as being "our" ancestor is by its morphological similarities to ourselves, all Middle-to-Late Pleistocene hominins were divided into those resembling "us" and those resembling Neandertals. The original morphological description of Neandertals lacked the sophistication of modern cladistics techniques and thus exaggerated certain characteristics as unique for this group. Since the prevailing approach to science is still the incremental, positivist one, Neandertals, once defined, remained unquestioned as a valid category.[26]

In other words, the choice of narrative in the nineteenth century was responsible for the view, now widely held to be erroneous, that Neanderthals and Sapiens were distinct species.[27] Whatever the weight accorded to issues of philosophical anthropology, it also matters to get the narrative right. But how?

The first step both for contemporary paleoscientists and for Voegelinian political science would be to abandon all historical teleology. The Voegelinian strictures against the notion of progress, including the progress of science, are numerous.[28] So far as paleoscientists were concerned, the variations within the genus *Homo* existing prior to both Sapiens and Neanderthals, often identified by such familiar Latin adjectives as *heidelbergensis*, *erectus*, and *habilis*, were not to be understood biologically as "contributing" to the eventual outcome. The end products, the Sapiens, were not present from the beginning, as an

oak was present in an Aristotelean acorn, for example. Moreover, the contemporary Darwinian synthesis managed to avoid any taint of determinism or historical teleology because the criteria of natural selection were not understood to imply a creative process. Ian Tattersall observed, "Natural selection can only work to promote or eliminate novelties that are presented to it by the random genetic changes . . . that lie behind all biological innovations." Accordingly, there could be nothing directional or inevitable in the process of evolution, "which can smartly reverse itself any time the fickle environment changes."[29] In short, "there are many ways of doing business in this world, and ours is only one of them."[30] All of which assertions were thoroughly Kantian, though presented without any anthropological arguments.

Let us consider two further accounts of the place of narrative in contemporary paleoscience. The first, by Wiktor Stoczkowski, discussed what he called the "hominization narratives."[31] For most such narratives, he wrote, "a change in the natural environment functions as the prime mover that triggers the process." There followed three main pathways depending on the importance accorded anatomy, technology, and subsistence, namely, that environmental change led to bipedalism, the origin of tools, or a transition to hunting and subsistence. And from there an additional causal chain unfolded: bipedalism led to free hands, which made tool production possible, which led to replacement of large with small canines; tools led to communication, language, and modern humans. Or, if hunting was seen as the most important, we get sexual division of labor, the custom of food sharing, and reciprocity, which initiated social life, which required communication and therefore language, allowing mental facilities to grow, leading to culture, and so on.[32]

Whether any particular sequence was empirically valid was secondary so far as the narrative structure was concerned. As Stoczkowski put it, the postulated environmental change that pushed the early hominins from the forest was also a transition "from a paradisal nature, often associated with the forest, where plentiful food went hand in hand with security, to the dynamic state of a hostile nature, associated with an open environment, where scarcity of resources led to fierce struggles for survival. It is only opinions concerning the cause of the change from [supportive] mother nature to [harsh] stepmother nature that vary."[33] "Paradisal nature," according to this story, provided

abundance not only for hominins but also for other animals, "so that no creature is obliged to kill in order to live, and friendship between humans and animals" was an essential feature of primordial existence, "where universal love holds sway and no conflict pits either humans or beasts against each other."[34] The argument reiterated what Stoczkowski called the "conjectural anthropology" found, for instance, in book 2 of Plato's *Republic*, where Socrates's first vegetarian city was dismissed by Glaucon as a city of sows. Glaucon desired meat and condiments.

In other words, whether from the start one postulated a benevolent Mother Nature or a malevolent Stepmother Nature, the result was the same: "Just as a shortage of food in a hostile environment forced humans to become hunters, so abundance in a hospitable environment obliged them now to start living by hunting. So, whatever the environment, its impact on our ancestors is the same, and the logic of ecological determinism remains safe." Moreover, the core of the hominization narrative remained intact: hominins moved from a prehuman paradisal state to the toiling human existence we all know today.[35] The moral of the story was therefore subordinate to the all-accommodating generative matrix from which it emerged: "Do we admire the progress of civilization?" Stoczkowski asked. "Then we shall adopt a view of feeble humans with no technical skill; we shall place them in a hostile nature and explain anthropogenesis by the primitive struggle that culminates in access to ever more flourishing culture. Do we doubt the benefits of progress? Then we make our primitive nature bountiful, our ancestors altruist, and brotherly sharing becomes the principal antecedent of explanatory sequences."[36]

Stoczkowski's conclusion was not simply that vernacular, folkloric, and philosophical discussions of anthropogenesis were "constructed out of the same conceptual matrix" as the paleoscientific account of hominization.[37] Rather, he argued that according great importance to the environment was not sufficient because, whether it was conceived as benevolent or hostile, the unscripted or creative response by hominins also was important. "My conclusion," Stoczkowski wrote, "is, in fact, limited to showing that the explanatory formulae keep returning, throughout the two hundred years or so covered by our scenarios, to the same premises, the very ones that naïve anthropology has been using for two millennia."[38] In other words, a focus on the narratives of paleoscientists was not simply concerned to show

that some accounts were wrong—although there may be errors—but also to argue that the general narrative of anthropogenesis had not changed since antiquity.

More specifically, the narrative of "out-of-the-jungle-and-into-the-savannah" did not always mean a change from the gentle gathering of fruits to the violence of hunting. "Things may have happened that way. But they may equally have happened differently, and we can itemize that 'differently' in a multitude of ways," said Stoczkowski. On the one hand, this meant that "validation based on plausibility can only separate those ideas that fit in with popular common sense anthropology from those that go beyond it. Thus the 'plausibility' of a hominization scenario [or anthropogenetic narrative] may guarantee its social success, but it tells us nothing about its value as a representative of historical reality." This "value as a representative of historical reality" would presumably require a more truthful narrative. But this means, on the other hand, that if paleoscientists did abandon the naïve (or folkloric, vernacular, and philosophical) tradition, they would also abandon at least part of the tradition of scientific interrogation and just look at random collections of data.[39] Again, one way or another, narrative is necessary.

This did not mean avoiding the obligations of empirical validation in order simply to elaborate a plausible story, the credibility of which depended on "the seductive world of naïve imagery whose imprimatur bears the stamp of common sense" and nothing else.[40] Empirical evidence was not simply useful as illustrative of the larger narrative, which is to say, only so long as it did not disturb or challenge it. But here we encounter a more serious problem. Like philosophy and theology, narratives aim to know the origin and the nature of things, unlike the sciences of phenomena, which seek "an empirically controlled correspondence between conceptual representations and the phenomena represented."[41] The more serious problem was that the ground or origin, the *arche*, of phenomena was not itself a phenomenon. Accordingly, a paleoanthropological narrative that remained unaware of its own status as narrative and of the nonphenomenal status of an *arche* would be as limited as any merely plausible commonsense story.

Stoczkowski's conclusion was regrettably tentative. By his argument, paleoscientific narratives usually oblige us "to put aside the familiar opinions, and it [science] disappoints by its semiotic poverty, which precludes the facile grafting on of

philosophical extensions loaded with 'meaning.'" The most "science" could therefore achieve was "the conviction that one can break with tradition," a conviction that "forms part of this new tradition."[42] The endless treadmill of breaking with tradition to constitute a new tradition could be concluded, at least tentatively, only with something approaching a philosophical anthropology to provide, precisely, a "meaning" that was indefinitely postponed and effectively excluded by such a scientific tradition.

In sum: Stoczkowski's argument may have been inconclusive but its very inconclusiveness did point to an important problem: If one traces the story of human origins back to the out-of-the-jungle-into-the-savannah account, where did *that* story begin? One way or another it would seem that even these comprehensive narratives eventually require an *arche* of some kind. This did not mean that archaeologists must become theologians or philosophers, but it did mean that they must discover some kind of principle that provided a meaning to the narrative. The tradition of breaking with tradition was as satisfactory, to use the phrase Leo Strauss applied to the Lockean account of human being, as the joyless quest for joy that characterized bourgeois life. Very simply we must eventually deal with the question, What in the paleoscientific account distinguished human beings from other animals? Such a question was philosophical rather than biological because it dealt with an issue, as Tilo Schabert said, that was there from the start, which is to say, it was always there. It was not therefore a question of the beginning of human beings or the beginning of anything else.[43] As we shall see in the following section, for many paleoscientists there was no "first" anything, though that also raised philosophical problems.

A second illustrative discussion of the problems raised by a narrative of beginning and of the centrality of narrative was *The Last Lost World* by Lydia V. Pyne and Stephen J. Pyne, a daughter-father team of historians.[44] They added to Stoczkowski's account by noting the oft-forgotten fact that "as an idea, the Pleistocene [2.6 M to 12 KYA] appeared in the early nineteenth century, inseparable from other concepts and assumptions of those times. It then underwent intellectual upheavals and an evolution of its own, as profound as the inundations of ice and pluvials." As did Stoczkowski, the Pynes argued that the Pleistocene was both a geological era and a cultural artifact expressed as a story. The former was about data, a chronicle of physical, fossil-correlated

strata: “The organization that matters is one that invests a timeline with significance to people, that endows it with meaning, that transforms chronicles into narratives that bestow on events a theme and an organizing principle that gives normative shape to an empirical tumult of bones, stones, air bubbles, and other hodge-podge from the past.”[45] In Western historiography, this is an old tradition: a chronicle is a time-factored sequence; a narrative is a story that makes sense of it (cf. Thuc. 1.97).

The Last Lost World reiterated several points already noted by Landau and Stoczkowski and recast several others they made. The Pynes argued, for example, that the two major narratives of the Pleistocene are (1) the geographic, which was centered on ice, and (2) the genomic, which was centered on hominins. The first presented early hominins as marginal creatures vulnerable to the whims of climate and geology who barely managed to meet the challenges of their environment. The once again more interesting genomic story told how we Sapiens behaved differently than other organisms because we acted on the basis of learning more than on instinct, which in this respect was “only a modernized version of a very old discourse in which we distinguish ourselves from the beasts by our reason, our capacity to choose and act freely, and our possession of an intangible something that other creatures lacked.”[46]

Central to the second story was the control of fire, the evidence for which dated from around a million years ago.[47] It was a catalyst for almost all subsequent human technologies. Fire was itself an odd technology: “It is not a material object but a chemical reaction. You don’t carry fire, you carry the conditions that permit it to happen; you can’t make it and set it aside for later use, you have to tend it. You can’t find fossil evidence of fire itself, like a lithic flake or a drilled bone; you find its chemical residues, such as char and ash.”[48] Gregory J. Whiteman made a similar observation: “Flames were very unlike visible agents such as other animals. Counterintuitively, flames were insubstantial; they could not be grasped, they moved unpredictably, they could easily be extinguished, and one could see through them. They represented *empowered nothingness*,”[49] and they divided the visual field into light and dark, hot and cold, safety and danger, and so on. Flames were inherently liminal. In short, fire “was completely *unlike* the material out of which it arose.”[50] The effects of fire were indirect and social because fire must be housed and

protected more even than the ones who tend it. No wonder even our contemporaries still maintain “eternal” flames and find campfires as congenial to contemplation as to storytelling and other rituals.

Using fire to heat foodstuffs gelatinized starches and turned them into easily digestible carbohydrates; it also made animal protein more digestible, detoxified many foods, and killed worms and parasites. Cooked food did not require huge jaws, so the skull need not be an anchor for them. Fire made possible hardened spear points. Fire-treated stone flaked more easily, and metals could be extracted from ores. Fire turned sand into glass and clay into ceramics.[51] In other words, whereas other tools have provided substitutes for talons and fangs, thus creating a degree of parity and eventually superiority with respect to other animals, “fire placed hominins apart.”[52]

The Pynes also dealt with the encounter of Sapiens and Neanderthals: hominins who evolved in the warmth of Africa met with those who evolved in the European cold. Their joint history was initially comparable to that of the ursids. That is, “the dramatic plot of the last cave bear,” which was replaced by the grizzly, “might complement the sad saga of the last Neanderthal.” But there was already a difference: however dramatic, the replacement of cave bears with grizzlies was not usually called a “sad saga.” Their more general point, however, was that the story of Sapiens was a story of exterminators and terminators who extinguished not just the Neanderthals but also other megafauna. Where did all the megafauna go? As Jared Diamond once colorfully remarked: they disappeared down the hole in the middle of human faces. The Pynes called this human achievement an ecological version of original sin. And even if or where Sapiens did not eat all the megafauna, they reduced the number of species, and if they did not put them at risk, then they tamed, domesticated, and tolerated them under their reign and sometimes rein.[53]

The issue of the Neanderthal–Sapiens encounter mattered in detail, the Pynes argued, because it was not just a question of climate or refugia: “Knowing how it happened describes the choices the founding sapients made, which defines their character.”[54] Accordingly, when paleoscientists adopted the position that behavior was the measure of modernity, “it became essential to deny Neanderthals any expression of art, higher reasoning, or abstract logic that would edge their behavior across

that tipping point." Granted there were (or are) morphological differences between Sapiens and Neanderthals, the question of whether those differences were judged by us as being significant or not, they argued, was beside the point because "their place among the evolutionary phylogeny of hominins may matter less than their role in the evolution of ideas. It seemed necessary to split off ancients is order to define moderns." It was relatively easy to place other members of the biological genus *Homo* into a historical chain, but, to repeat, Neanderthals were not ancestors of Sapiens. Thus "they practically begged to be different. Yet the basis for that discrimination was unstable, because it relied on a definition that moved from brain size to mental capacity, and this was itself a construction of the mind, of the mind contemplating the mind." Or more accurately, of the Sapiens' mind contemplating both the mind of Neanderthals and the mind of Sapiens.[55]

The logic of the authors finally brought us to the most interesting and fundamental question: What made Sapiens specifically *human* in a way that Neanderthals were not? And this was a question of philosophical anthropology, not biology.

The Pynes discussed this question in terms of what they call moral philosophy, something like Kant's moral law. One might have reservations regarding the details of their argument, but they clearly understood the problem: "To be powerful, a narrative must . . . be anchored in art and philosophy, since aesthetic closure and moral resolution are what convey the context that endows facts with enduring meaning. They make a chronology into a story and distinguish a narrative from a mathematical model."[56] They emphasized art more than philosophy and, not surprisingly, turned to a major venue of very early art, the decorated caves of Franco-Cantabria. Caves were important in the Upper Paleolithic long before Sapiens started decorating them with images and engravings:

> Caves were domiciles, refuges and sanctuaries, oracles, and entries to other worlds. They collected the outside world, sieved its abundance and stockpiled the survivors. Cave bears went into caves to hibernate and die, Neanderthals and sapients to live and leave relics. The known world of Pleistocene hominins is largely the microcosm preserved in its caves. They are, in truth, immense caches of data. Their microgeomorphology documents changes in climate and terrain; their biotic residues, rhythms of biogeography; their stratigraphy, a chronicle of natural history;

their bones, a depository of relics, curiosities, and cultural histories.[57]

Both Neanderthals and Sapiens used caves as refuges and occasionally as graves, but (with some exceptions) apparently only Franco-Cantabrian Sapiens—popularly called Cro-Magnons—decorated them.

The history of the worldwide expansion of Sapiens out of Africa has been several times revised over the past generation as more evidence has come to light. So far as the migration of Sapiens into Europe is concerned, the relevant events of the later Pleistocene were the following: (1) morphologically modern humans emerged in tropical eastern Africa about 150 KYA followed by (2) a 100 KY uneven expansion across the rest of the Old World that probably involved encounters with Erectines and Denisovians. Around 75 KYA additional early modern humans migrated from eastern Africa to southern Asia and eventually into Europe, where they met late archaic humans, mostly Neanderthals. The last period, from 50 KYA to 35 KYA saw the establishment of Sapiens as the dominant form or lineage of humanity.[58]

Some paleoscientists argue that the behavior of these ecumenic colonists was entirely new and that their spread was a "revolution." Others dismiss such stories as romantic nonsense and argue that the African exodus was nothing but one more incremental migration. The argument in favor of a "revolution" brought about by Sapiens was that "by the time sapients returned to the Levant, around 60,000 years ago, they were distinct from—behaved differently than—those predecessors who had been driven out by the glacial cycle."[59] On the Sapiens' side, this initially meant distinguishing between "anatomically" and "behaviorally" modern humans, which sounded simple enough, but in fact, as we argue in the next section, it raised some significant philosophical problems. Within anthropology, including paleoanthropology, the problem has often been discussed in terms of nature and culture, which we also discuss in the next section. It was already implicit in the "replacement" narrative of Neanderthals by Sapiens. The preliminary problem concerns "anatomically" and "behaviorally" modern humans.

Nature and Culture

We have occasionally used the conventional paleoanthropological term "anatomically modern humans" to describe the African Sapiens who in Western Europe came to be called Cro-Magnons. But as Tim Ingold has pointed out, an anatomically modern human "is an analytic fiction whose principal function is to cover up a contradiction at the heart of modern evolutionary biology."[60] Specifically, Cro-Magnons were not, as has often been claimed, "entirely like ourselves." They did not live in cities or drive SUVs or even bicycles. In response to this commonsensical observation, the argument was modified to indicate that they were "biologically" entirely like us, though not "culturally." Like them, we walk bipedally, even though we also ride bicycles and drive SUVs. And, after all, the bicycle was designed to fit bipedal walkers and to translate bipedal motion into rotary motion. But this change is historical, the orthodox say, not evolutionary, a fact of culture, not of nature.

Ingold, an anthropologist with a professional interest in the history of anthropology, the Saami, Inuit, and paleoanthropology, argued that the culture/nature distinction was systematically misleading. For example, we conventionally assume that the difference between biological evolution and historical or cultural change is that we are "born with" the ability to walk, whereas learning to ride a bicycle is a matter of cultural learning or enculturation. And yet, we all must *learn* to walk, with the help of others who already know how. Walking is a skill that we learn from older people, whose presence is required: without them we wouldn't learn to walk—or survive, which is why all children who survive (except those injured in one way or another) do walk. Likewise children learn to ride bicycles even though no one claims we are "born with" the ability to ride a bike. Why not? Why not situate walking and cycling within the same overall evolutionary (or historical) process? That is, once we consider human being as human-being-in-an-environment it becomes obvious that isolating a biological or, even more so, a genetic human being is to abstract from reality.

A similar argument could be raised concerning the evolution of language. Here the parallel between walking and bicycle-riding would be between speech and literacy. The argument is that, since the Upper Paleolithic, language was innate or natural, whereas literacy was culturally or historically acquired. However, human babies are not born talking. Their capacity develops over a number of phases or stages and does so in the presence of older

helpers in a complex environment. The same is true for literacy. It is not, therefore, an add-on to language, but one element in a complex process involving both vocal-auditory and manual-visual skills. Accordingly, even if *Homo erectus* did not speak, how was this different from the failure of Upper Paleolithic humans to write? "If Cro-Magnon Man, had he been brought up in the twentieth century, could have mastered the skills of literacy, why should not *Homo erectus*, had he been brought up in the Upper Paleolithic, have mastered language?"[61]

The "capacity for language" by Ingold's argument, was as problematic as the "capacity for bipedalism." There was, he argued, no evidence to support the assumption that anatomically modern humans have a universal biological capacity for language. Rather, the specific and particular mother tongue they learn was enculturated. Accordingly, by learning to speak in a specific context, the child develops linguistic abilities and competences on the basis of neurological connections that "underwrite" speech achievements. In order to consider the "orthodox" model to be plausible, you must again assume an artificial separation of a hypothetical general capacity from particular language skills. In this respect speaking is like walking: there are many ways of doing both, and no "essence" of walking or of speaking, no capacity for bipedal locomotion or for language exists. Both are skill-based achievements "of the whole human organism," for which "the organism serves as a vehicle." That is, it would be more accurate to argue not that we start out much the same biologically and end up culturally different but "that human beings are not naturally pre-equipped for any kind of life; rather such equipment as they have comes into existence as they live their lives, through a process of development. And this process is none other than that by which they acquire the skills appropriate to the particular kind of life they lead."[62]

So then how did biology and culture come to be separated? Ingold's argument was that it started when we assumed a context-independent specification of the biological human organism that was entirely abstracted from reality, namely, the genotype from which the specific phenotype was a derivative. Only the former, according to neo-Darwinian evolutionary theory, could be carried across the generations. Thus, in specific phenotypes the life-history of a genotype was "actualized." By itself, the frequency of constituents of a genotype in populations of individuals underwent evolutionary change through variation under the

pressure of natural selection. The discovery of DNA and the use of information theory to describe the "encoding" of information in nucleotide sequences added to the problem: biologists simply discovered their own assumptions "reflected in the mirror of nature." Granted that the genome was a regulator of developmental processes in an organism and that mutation could cause changes in the genome, this did not mean the genome contained an essential specification of the organism or of its capacity to act or innovate. There could be genetic change or mutation without behavioral change and behavioral change without corresponding changes in the genome—especially with humans.[63]

If, as was claimed by the Darwinian orthodoxy, the capacity to walk was genetically encoded or part of the genotype, then walking was the consequence of an information algorithm. But what, then, did one make of the capacity to ride a bicycle? If it was not part of the human genotype and thus not part of biological evolution, it was also true that cycling skills are passed on from one generation to another, which meant it could not be a result of phenotype either, because, according to Darwinian theory, phenotypical characteristics were not transmitted across generations. Accordingly, to avoid reducing bicycle-riding to genetics, we speak of social or cultural learning having transmitted information across generational divides. But neither walking nor bicycle-riding could be formally codified—as Polanyi argued convincingly with respect to bicycle-riding.[64] What got transmitted, as has been implicitly indicated, were skills and dispositions, not rules of behavior, none of which were intelligible as the output of an inner genetic program. Walking and bicycle-riding were intentional activities of the whole organism. It may be true that humans can do unique things and that certain genome changes were needed, "but the genome, on its own, does not specify a capacity of any kind."[65]

Here is another way of looking at the problem. No one speaks of anatomically modern elephants or anatomically modern deer. Why not? Because of the assumption that there could be no cumulative changes in the behavioral capabilities of nonhumans that were not tied to changes in their essential, species-specific forms. But why do so for humans if it resulted in the untenable position that natural evolution and human history are ontologically distinct? That is, "the historical process, which purports to raise humanity onto a level of existence above the

purely biophysical, is presupposed by science as providing the platform from which its practitioners—who are of course humans too—can launch their declarations to the effect that the human is just another species of nature." Because "there are no scientists among the animals," the animals could not make scientific mistakes (and metaphysical mistakes), such as declaring that they were just another natural species.[66]

So long as the biological constitution of humans was understood to be given in genetic endowments "there can be no escape from racism save by disconnecting culture from biological variation," which was also the point of Voegelin's critical remarks in his 1933 race books, discussed in the next section. Ingold made the point that splitting biological and historical evolution, which would include the (phenomenal) science of biology, would return us to some form of pre-Kantian dualism, according to which biological evolution was unaffected by the growth of knowledge, even though a certain kind of knowledge accounted for biological evolution. Ingold therefore proposed two continua: one of biological evolution that led to anatomically modern humans; the other of historical evolution that led from hunter-gatherers to modern science.

Rather than look at the nonphenomenal or substantive problem of an *arche*, Ingold considered the results. In this respect his argument was more Hegelian (or Marxian) than Kantian. Accordingly, Cro-Magnon humans were physically or biologically equipped to be hunter-gatherers, but they had minds that could reason someday like a scientist's. "But the time was not ripe," so all history had to unfold before this potential could be realized, and do so within the stable form expressed by way of the "modern human" genotype.[67] The problem, however, was that this "modern human" was itself a creature of modern Western thought understood as the epitome of human existence that was then "retrojected onto the Paleolithic past as a set of genetically inscribed developmental potentials underwriting their realization." Rather than expand the mythical significance of this mysterious and metaphorical "underwriting," Ingold simply dismissed the metaphysical problem of an *arche*: "There is, then, no point of origin when history began: no moment of emergence of 'true humanity.' Thus we do not need one theory to explain how apes became human, and another to explain how (some) humans became scientists. For the business of human evolution was not finished with the arrival of the Cro-Magnons, but has

carried on into the present—though we call it history now." Nor was there an "origin" of language because there was no way of saying what a language was "apart from the manifold ways in which people actually speak."[68]

It may be understandable that anthropologists declined to consider the philosophical problem of an *arche* that expressed rather than resolved a mystery. Indeed the statement that there was no origin or "first" anything has become a commonplace among such scholars. Beebe Bahrani, for instance, quoted the French archaeologist Jean-Jacques Hublin: "We are drawn to origin stories. Of course, it is totally contradictory to the concept of evolution, because there is no 'first' anything. But people want the 'first' stories."[69] Unlike Kant, Hublin was untroubled as to *why* humans want "origin stories." It is apparently just a quirk. In a similar mood, the American archaeologist Whitney Davis noted, "We need a specific argument—let us call it an origin myth—to show how the diagram of the logical relations between modes of Representation or 'symbolling' and of marking might be converted into a *history*. We need an origin myth for representation *as such*." Moreover, the "origin myth" he was looking for was "an explanatory causal analysis."[70] Davis's problem here is that a *mythos* is not a *logos*, a myth is not an argument. Long before Kant's version of the distinction, Plato had already made the same point.

Another widespread distinction in Greek philosophy was between nature (*physis*) and convention (*nomos*). This distinction was found in classical political science and in the remark of Aristotle that the *polis* exists by nature and that human being is by nature a political animal (*politikon zoon*) (*Politics* 1253a1–3). At the same time, each *polis* embodied its own conventions. One might say, therefore, that by nature, human beings required conventions. Something similar has been articulated by paleoanthropologists. Ingold remarked: "It cannot be emphasized too often that humans, with the advent of culture, did not cease to be animals; for culture *completes* the human animal, it does not replace him with something different."[71] Likewise in a classic essay, "The Impact of the Concept of Culture on the Concept of Man," Clifford Geertz argued from the premise that there was an overlap in the development of culture and the evolution of humans from Australopithecines. The precise dates, about which there is considerable disagreement, were not critical: "What is critical is that there was an overlap and that it was a very

extended one." The final phases of the phylogenetic history of humans took place at the same time as the initial phases of human cultural history, namely, the Late Pleistocene. Accordingly, "men have birthdays but man does not," by which he meant that culture is not an add-on to an otherwise anatomically complete modern human animal, but a central ingredient in the production of that animal. "The perfection of tools, the adoption of organized hunting and gathering practices, the beginnings of true family organization, the discovery of fire, and, most critically, though as yet extremely difficult to trace it out in any detail, the increasing reliance upon systems of significant symbols (language, art, myth, ritual) for orientation, communication, and self-control all created for man a new environment to which he was then obliged to adapt," said Geertz. In short, humans were "incomplete or unfinished animals who complete or finish ourselves through culture—and not through culture in general but through highly particular forms of it," including Hopi, Italian, upper-class, academic, and, presumably, Neanderthal.[72]

This traditional reading of Aristotle, no less than the explicit arguments of Ingold or Geertz, raised a significant enough question: What is the relationship of the "natural" or "animal" being of humans and their unique characteristic as artists or scientists? It seems to me that raising the question was already an achievement even if the answers provided by these archaeologists and anthropologists were not entirely satisfactory. Adequate answers, I would argue, require, so to speak, bigger guns. They are supplied by philosophical rather than social anthropology.

Philosophical Anthropology

At the beginning of this chapter we distinguished paleoscience and political science on the grounds that the former dealt systematically with the data of the material or biological world and the narrative paleoscientists offered to account for that world was necessarily bound by the givenness of living things. Hans Jonas made effectively the same point as Brendan Purcell, whom we quoted there, but Jonas did so in a slightly different way. Unlike a philosopher, a natural scientist "can state what is valid in it [natural science] and what is forever out of the question in the certainty that the latest findings are almost the most correct up to that moment. The past is, at the most, of historical

interest."[73] No contemporary physicist defends phlogiston; in contrast, contemporary philosophers do defend Plato or Hegel without seeming obsolete. In the last section we saw with the argument of Ingold that the attempt by scientists to argue that humans were just another natural species led to paradoxical, not to say, self-canceling, results.[74] Again Jonas made a similar point anecdotally. In 1845, three young physiologists, Emil du Bois-Reymond, Ernst Brücke, and Hermann von Helmholtz, all of whom later became famous, pledged a solemn oath that they would establish and compel the acceptance of the truth that organisms contain no active forces but only common physical and chemical ones. Accordingly, they devoted their lives to discrediting "vitalism" in the life sciences. And they surely succeeded. "What escaped them was the fact that by making *a* pledge, no matter which, they had already contradicted or acted counter to the particular content of *this* pledge," said Jonas. That is, they did not pledge to let molecules in their brains determine their thoughts and speech, but bound themselves, human persons, to remain faithful to a present insight, "thus by implication declaring at least *their* subjectivity to be master over their conduct." By making a vow they gave credit to something nonphysical, namely, their relationship to truth, with a power over their future behavior that they denied in the content of their vow. This is, in Kantian terms, an antimony that can never be solved; it is *the* skeleton in the closet of modern science.[75] Following Kant, it has been the task of philosophical anthropology to account for the unity of human being, from physical and material to spiritual. In this section we are concerned principally with the arguments of Jonas and Voegelin, though we begin with a brief consideration of Bernard Lonergan and Max Scheler, upon whom Purcell also to a degree relied.

Lonergan

Whether one accepts Lonergan's arguments or not is a secondary question, compared to understanding him as an example of a philosopher who raised the kinds of questions that were so often ignored by paleoscientists. He proposed a generalized framework for the relationship of all levels or degrees of accounts of reality from physics to anthropology. He did so, moreover, in an effort to resist the evident temptation to reduce, for example, humans to animals, animals to biological life, life to chemistry, and

chemistry to physics. As part of his argument, Lonergan developed the concept of "emergent probability."[76] The details of Lonergan's argument, which are widely discussed in the secondary literature on his work, are less important than the insights illustrated by his examples. Consider, for instance, the "dietary schemes" of animals:

> All carnivorous animals cannot live off other carnivorous animals. Hence, a carnivorous, dietary scheme supposes another herbivorous, dietary scheme but, inversely, there could be herbivorous animals without any carnivorous animals. Again, plants cannot in general live off animals; the scheme of their nourishment involves chemical processes; and that scheme can function apart from the existence of any animals. Finally, chemical cycles are not independent of physical laws yet, inversely, the laws of physics can be combined into schemes of recurrence that are independent of chemical processes.[77]

Each "level" provided the "materials" for the one above it, rather akin to Aristotle's distinction of form and matter, and with a similar kind of irreversibility. Likewise, for example, Aristotle argued for a similar hierarchy of being: there is no fully actualized (human) life—no *eu zen*, or "good life"—without (animal) life.

Moreover, according to Lonergan, there is a sequence of sciences corresponding to the several "levels" of reality. Again, by way of illustration:

> If the laws of subatomic elements have to regard the regular behaviour of atoms as mere patterns of happy coincidences, then there is an autonomous science of chemistry. If the laws of chemistry have to regard the metabolism and division of cells as mere patterns of happy coincidences, then there is an autonomous science of biology. If the laws of biology have to regard the behaviour of animals as mere patterns of happy coincidences, then there is an autonomous science of sensitive [or animal] psychology. If the laws of sensitive psychology have to regard the operations of mathematicians and scientists as mere patterns of happy coincidences, then there is an autonomous science of rational psychology [or philosophical anthropology]. Nor does the introduction of the higher autonomous science interfere with the autonomy of the lower; for the higher enters into the field of the lower only in so far as it makes systematic on the lower level what otherwise would be merely coincidental.[78]

That is, the higher sciences explained what, to the lower ones, was inexplicable—mere patterns of happy coincidences. The significance of this understanding of emergence could be seen in a negative way by contrasting it, for example, with the conventional accounts of paleobiologists and paleoanthropologists, who considered human beings either as part of a hominin sequence of organisms or as a brand-new species unconnected with a hominin sequence. Whether paleoscientists prefer continuity to discontinuity was a matter of zoological preference or judgment, not philosophical anthropology. From the perspective of philosophical anthropology, therefore, the use of the term *Homo* with respect to other species in the hominin sequence was a categorical error even though, considered biologically, such usage was conventionally acceptable.

The problem was illustrated rather whimsically by the geneticist Jonathan Marks. In *What It Means to be 98% Chimpanzee*, he began by noting that the physical and chemical structure of DNA means that no particular DNA sequence can be more than 75 percent different than any other. But the fact that human DNA is more than 25 percent similar to that of a dandelion does not make us over a quarter dandelion or, for that matter, 35 percent daffodil. When we look at chimps, where our and their DNA is about 99 percent similar, the interesting question is why we think that matters, or at least matters so much more than our anatomical similarity, which has been known from the moment we set eyes on them. The answer, Marks says, lies in the history of biology and specifically during the period of the development of molecular biology in the 1960s. In this context, he told the story of Emile Zuckerkandl, who argued on the grounds that gorillas and humans had very similar hemoglobin that "from the point of view of hemoglobin structure, it appears that the gorilla is just an abnormal human, or a man an abnormal gorilla, and the two species form actually one continuous population." By a similar argument a daffodil is just a very, very abnormal gorilla or a somewhat less abnormal dandelion. Marks reported the response to Zuckerkandl made by George Gaylord Simpson, a distinguished paleontologist: "A gorilla is not an abnormal man; it's a gorilla."[79]

Marks's commonsensical discussion raised a more serious problem, which involved Kant's power of judgment. When typological discrimination between life forms is based on style or

"look," the element of judgment is self-evident. When it is based on statistical indices, judgment is often masked by a convention that a certain probability or confidence level is deemed adequate. But adequacy is not a statistical concept and conventions of acceptance are necessarily conventional. Marks made the point by raising two questions: "How similar is a large sphere to a small sphere? Is a large sphere more similar to a small sphere or to a large cube?" This is a simple problem of Aristotelian analytics. Or as Marks said, "Sameness/otherness is a philosophical paradox that is resolved by argument, not by data. Genetic data tell us precisely what we already know, that humans are both very similar to and different from the great apes."[80] Thus, if we studied humans as if they had no culture or sense of the divine or of ethical norms, we were not being scientific. We would simply not be studying humans. It is as if an ornithologist wanted to study a duck without feathers or web feet. It wouldn't be a duck.[81] In Lonergan's more philosophical language, biological evolution—the hominin sequence—constituted an emergent reality that was nonbiological, namely, a specifically human reality.

Scheler

Both Jonas and Voegelin initially developed their philosophical anthropologies during the 1930s on the basis of the work of Plessner, Groethuysen, Jaspers, Heidegger, and especially of Max Scheler, to whose last work, *Die Stellung des Menschen im Kosmos*, they both referred.[82] As David J. Levy noted, Scheler's book is called *The Place of Men* [or *of Humans*] *in the Cosmos*, not in "Nature" or in the "World." The intentional use of the term "cosmos" signaled Scheler's intent to integrate the finite sphere of positive or external knowledge of human being with the question of ultimate origins and destiny or internal, subjective, spiritual, or "religious" knowledge.[83] Interestingly enough, one of the central questions Scheler discussed is still considered important in popular culture today: the conflict (or alleged conflict) between biblical and Darwinian accounts of human being, "man."

Both such accounts, Scheler said, were impaired "because of progress in the specialized sciences that deal with the nature of man" and "man's special metaphysical place in the cosmos." This structure could also be applied to philosophy, but Scheler was particularly critical of biologists. To begin with, to consider man

as an animal with more or less distinct morphological characteristics one must come to terms with the odd fact that humans "occupy a relatively small corner of the animal kingdom." This was true even if we say that humans occupied the "pinnacle," not least of all because the image connoted a small area compared to what lay continuously beneath the pinnacle. That is, even if one assumed human being were exhausted by animal being, humans remained a tiny minority with enormous capabilities that needed to be understood on those grounds. The second, biblical, argument took exactly the opposite position: human being was sharply distinct from animal being. Considered philosophically, Scheler said, this argument simply posited an "essential concept," *Wesenbegriff*, of human being distinct from animal being. In contrast to both, Scheler proposed an inquiry into whether or to what extent human beings had "special characteristics not comparable to those of any other species."[84] To simplify somewhat, Scheler proposed to determine whether human being contained characteristics that were both additional to animal characteristics and of such a nature that their presence indicated a different sort of being from animal being. He would do so, moreover, on the basis of evidence and argument and not merely on the grounds of a postulated *Wesenbegriff*, which was simply an argument from definition or a dogmatic assertion.

Scheler began with an examination of the structure of what he called "the biopsychological world." The term was meant to indicate a unified field of reality such that "the limits of psychic life coincide with the boundaries of organic life itself."[85] That is to say, living beings, including plants, had a "psychic" or "inner dimension," which referred to a sort of psyche or soul, and had an external or objective dimension that living things shared with inanimate objects or inorganic bodies. Scheler's use of the term "psychic" as being equivalent to "alive" was decidedly antique.[86] As did Lonergan, he described the orientation of plants as being fixed by their natural environment rather than being in any sense conscious or self-aware. This did not mean that plants could not express an inner state—such as poor health—but that they did not communicate, they were not social, and they did not play. They did, however, "strive" to exist.

This initial form of interiority, which Scheler called a feeling or sense of drive, urgency, or vitality, *Gefühlsdrang*, a kind of "life-urge" that bore a family resemblance to Bergson's élan *vital*, was also present in animals and humans. Scheler used the

familiar word “instinct” to refer to a second and differentiated form of interiority and described it as purposive, in the Kantian sense, as unchanging, typical, innate, and hereditary (and so useful for the species rather than the individual). Even so, instinct could be improved by “practical intelligence,” another Kantian-sounding term, even in animals. For example, a predator (a lion) may hunt a certain prey (a zebra) by instinct, which was inherited, but the skill to do so with success was learned through “practical intelligence,” or practice. Moreover, these leonine hunting skills, which were absent from plants, could be passed on to succeeding generations by “pioneers.” Scheler called this psychic form “tradition” or “habit.” Tradition was not, however, historical knowledge that may be preserved in conscious memory. Indeed, human differentiation of consciousness depended on dissolving tradition. And “practical intelligence” did not imply reflection but a capacity to respond to a new situation either cleverly or foolishly—as when Köhler’s chimps solved the problem of getting an out-of-reach banana first by piling up boxes and then by clambering up the pile to get at it, or when a seagull drops a clam on the rocks to break its shell.

Given what might be called the psychic continuity of life-forms in nature, Scheler then reconsidered the question of the uniqueness of human being. The two opposite positions, roughly corresponding to the neo-Darwinians and the intelligent design creationists of today, answered that either there is no essential difference because animals have intelligence, or there is an essential difference because animals lack intelligence. Scheler, however, maintained both that animals did have intelligence and that human being was essentially distinct from animal being.

His reasoning was that human being was not distinct in light of being characterized by an additional psychic or vital power associated in some way with the intellect or the soul, but just the opposite: human being had the capacity to transcend, even to negate life as such, the most basic element of which, vitality, was found even in plants. That is, the novel human attribute was, in principle, “opposed to life as such, even to life in man.”[87] Scheler called this principle *Geist*, “spirit.” Accordingly, “the essential characteristic of the spiritual world, regardless of its psychological make-up, is its existential liberation from the organic world.” A spiritual being was free with respect to the external environment but also with respect to internal drives, instincts, and traditions. “Moreover, such a being is capable of

transforming the primary centers of resistance and reaction into 'objects,'" *Gegenständen*, rather than live immersed in the world "ecstatically," as animals do.[88] A spiritual being had a world, *Welt*, not merely an environment, *Umwelt*. The difference between the two was that the latter was a kind of force field of sensations that could attract or repel the organism, whereas the former was filled with objects the essential attributes of which were knowable. Of course, humans responded to stimuli—heat, cold, pain, pleasure—but they did so as responses to characteristics of objects, and not as direct forces, the way an organism responded in accord with the needs of survival. In other words, a spiritual being can distance itself from the world and do so deliberately and consciously, but "the animal sees and hears—without knowing that it does so."[89] Spiritual beings—humans—were self-conscious, a point made by many modern philosophers.

Scheler went on to elaborate by example and by reference to Western philosophical formulations, including those of Kant, the differences between human and animal being. For example, humans were capable of irony, humor, and promises, which indicated a capacity to transcend the here-and-now of present actuality. Practical animal intelligence might respond to the experience of pain by trying to get rid of it. In addition, the contemplative spirit might wonder, "What is pain? why is the world painful? what is reality like that pain is possible?" Scheler called this additional capability, which had nothing in common with vital or psychic realities or with practical intelligence, the capability of "ideation," *Ideieren* (a Scheler neologism). At one point, Scheler said that the act of ideation "opposes" the here-and-now with "an emphatic 'No.'"[90] The specific resistance by which vital being was assured of reality is, for a spiritual being, entirely negated. "Ideation" is, thus, an "ascetic act by which we suspend the operation of the vital impulse in relation to which the world appears as resistance, and which is the precondition for all sensory experience and its accidental qualities."[91] Human being, the being of the spirit, Scheler concluded, was thus distinct from psychic or vital being.

The details of the third section of his essay were concerned with comparing his analysis of life and spirit with that of other thinkers, from Plato to Freud. In sum, he proposed a kind of metaphysical duality—life and spirit—in place of the duality of body and soul. On this basis "the physiological and psychic processes are strictly identical in an ontological sense" because

they were two phenomenal aspects of the same "process of life." In short, "psychophysical life is one" and the spirit is something other.[92]

This distinctiveness did not, however, amount to an existential autonomy because the existing human being remained alive in addition to being physical. Rather, the center of the spirit was oriented toward what Scheler and many of his contemporaries called the "Ground of Being," (*Seinsgrund*) a term we have already encountered in my preface. Such an orientation was an attribute of Being that was manifest only in human being. This manifestation, however, because it could occur only in a live, physical human being, also drew on vital and psychic realities. Scheler's argument led to the conclusion that the most important distinguishing element in human being was its relationship to the Ground of Being, a reality that was experienced only as an awareness of participation, which was the very opposite of objectivity. Such an insight provides a different approach to Paleolithic humans.

Jonas

In *The Phenomenon of Life*, Hans Jonas made an argument similar to that of Lonergan and Scheler. As did they, he discussed the differences between life and matter, plant and animal life, and animal and human life. Life was a kind of defiance that necessarily ended in compliance: all life is mortal. Animal was distinguished from plant life, Jonas said, insofar as plants and mere organic forms are alive, they are capable, through metabolism, of distinguishing themselves from matter. For the same reason, because organisms are sensitive to stimuli, they may respond by being irritated by matter. This elementary character of being alive is further differentiated in animal forms through motility, perception, and emotion. For animals the world was both inviting and threatening; for plants it was neither. And yet for both, humans know, life was precarious because it will end.[93] Roger Scruton expressed this same thought: "The real problem, as I see it, is self-consciousness—the first-person awareness that distinguishes us from the other animals," especially our awareness of death, "the boundary that has no other side."[94]

Jonas was concerned, in other words, not with genesis but with morphology, not with origins of the human spirit or of life, but with what is. In his view, "the mystery of origins . . . is closed

to us." Ignorance of origins was not a problem for science, whether natural, social, or philosophical. As a consequence, no one needed to feel anxious about our scientific ignorance of origins, from which it followed that any scientific investigation of origins was bound to result in the reduction of essential ignorance to imaginary knowledge. Furthermore, as Jonas explained, ignorance of origins was not a problem because "where we start, the 'first stirrings' have long occurred."[95] In other words, once life existed, it set its own conditions for our understanding of it.

Specifically, Jonas argued that a central category of life, as distinct from inanimate matter, was freedom. Life, Jonas said at one point, was an "ontological surprise."[96] How could it be otherwise? If freedom were caused by an antecedent, it would not be the appearance of freedom but merely the effect of a prior condition, an example of Kant's if-then logic of matter. Jonas distinguished three elements to this most basic mode of freedom. First, the *form* of an organism was to a certain extent independent of the matter of which it was made. This is what Kant discussed in terms of the novel organization of an organism. Jonas discussed this first degree of freedom by analyzing the meaning of metabolism. Material identity, Jonas argued, was confirmed by the continuous presence of discrete units that could be externally measured; organic identity maintained a continuous form, but metabolism induced a perpetual turnover in physical constituents. "The observer of life must be prepared by life" so that only an organic being could be capable of understanding an organism. Moreover the possibility of metabolism was also compulsory "since its execution is identical with its being." If the organism ceased to metabolize, it would cease to exist as an organism and revert to matter: "Its liberty is its peculiar necessity."[97]

The degree of freedom attained by a metabolizing organism, because it was also necessary, carried "the burden of need," which was what made organic being "precarious." With the possibility of not-being, life had introduced an alternative. "Life," Jonas said in a later study, "is the explicit confrontation of being with non-being."[98] Indeed, the threat of this alternative, of not-being, meant that life must "affirm itself" or, as Scheler said, it must "strive" or "drive" itself in a "protracted effort of delay whose end is foredoomed." Life was emancipated from mechanical matter yet dependent on it, free yet subject to necessity and threatened by want. By whatever means substance or being turned organic, it thereby became informed with anxiety

regarding death.[99]

In addition to sustaining unity of form by metabolism, the organism must encounter matter outside itself so that matter could be changed to sustenance. In this way, second, life is "turned outward and toward the world in a peculiar relatedness of dependence and possibility," which Scheler called *ek-static* existence. At their simplest, organisms possessed the attribute of irritability or sensitiveness. The elaboration of these capabilities increasingly disclosed both the world and the individual. And third, complementing or balancing outwardness, there was an inwardness, a felt selfhood in this *ek-static* living into the world. The organism thus faced both outward and inward. This dual self-positioning ensured that the organism is never just what it is; it is also a becoming.[100]

Plant life and animal life were distinguished, Jonas argued, by the greater "mediacy" of the latter, which may be summarized as the refinements or differentiation of irritability into motility, perception, and emotion. Roots, and the possibility of direct metabolism of matter, both relieved a plant of the necessity and of the possibility of movement and thus also of perception. Animal metabolism required motility and perception, along with emotion, which also disclosed time or "temporal distance" between the animal and the object of its desire, particularly when metabolism took the form of predator and prey, which required drawn-out effort and noninstantaneous fulfillment.[101] Thus did the world grow inviting and threatening at the same time. Thus did animal existence become open to the possibilities of enjoyment and suffering, to appetite and passion.

"Motile existence," wrote Jonas, "is fitful and anxious: plant life is nothing of the kind." But doubtful as the gains of motility may be in the context of the value of mere survival, "the survival standard itself is inadequate for the evaluation of life. If mere assurance of permanence were the point that mattered, life should not have started out in the first place." Life was *essentially* precarious, an adventure in mortality. No life form could be assured of endurance the way an inorganic body—the Rock of Gibraltar, say—could be. Thus motility, emotion, and perception were not just "means" to assist in the survival of animal life; they were also qualities of life to be preserved: "The feeling animal strives to preserve itself as a feeling, not just a metabolizing entity."[102] The gain of animal over vegetative life was not on one side of the balance sheet—enjoyment over suffering, for instance

—but consisted in the presence of both. The originality of plant life was raised against the indifference of nature; this "selfhood" was enhanced by animal life, but from the start the price had been mortality.

The logic of Jonas's argument, which extended from inanimate matter to life and from plants to animals, could be further extended to describe the specific differences of human being within the animal kingdom. In a later collection of essays, Jonas raised the question, How do we know that artifacts we turn up are works of human beings? Long before we excavate temples, we find three things: tool, image, and tomb. The *tool* tells us "that here a being compelled by his needs to deal with matter, [who] serves these needs in artificially mediated ways" by invention and then by improved invention. The *image* tells us "that here a being, using tools on matter for a immaterial end, [who] represents to himself the contents of his perception," who changes those contents, augments them, and thus generates "another object-world of representation beyond the physical objects of his need and direct satisfaction." The *tomb* tells us "that here a being, subject to mortality, [who] meditates on life and death, defies appearance and elevates his thought to the invisible," thus subordinating both tool and image to such thoughts. All three artifacts transcend what is given—physical necessity, passive perception, and death. All are different expressions of human freedom, which we share with the artificers even if we understand little of the purpose of the tool (except that it had one), the meaning of an image (except that it represented something), or the ideas of a funeral cult (except that ideas of some sort were at work and that they pondered the riddle and paradox of a beyond, Scruton's boundary that had no other side).[103] We also know the historical consequences: the continuation of toolmaking led to technology, of image-making to art, and of tomb-making to metaphysics, each of which indicated our enhanced relationship to reality and our deeper understanding of it.

Of these three kinds of artifacts, Jonas gave the greatest analytical attention to images and to the capacity of image-making as the most important specific difference between humans and animals because it was most comprehensively justified by its results and because the formal qualities of images and image-making may be sufficient to distinguish Sapiens from Neanderthals and perhaps to distinguish the consciousness of

Sapiens from that of Neanderthals.[104] Jonas described eight formal qualities of images and image-making:

> 1. an image was a likeness of another object;
> 2. the likeness was intentionally produced as a representation of something;
> 3. the likeness was incomplete, an image, not an imitation, a representation not a simulation;
> 4. incompleteness implied free choices and selection in order to emphasize what matters;
> 5. incompleteness of representation led to de-emphasis on similitude and emphasis on recognizability of intention as symbolic conventions and graphical abbreviations were developed: where at first a degree of likeness was required to make an intention recognizable, eventually the image-making capacity was open to invention;
> 6. the object of representation was visual shape, not size, color, etc. because sight was the basis for abstraction;
> 7. the image was at rest, though it could depict motion because it did not represent the causality of its own genesis;
> 8. the difference between image and the material presentation of it meant (a) copying of the image was possible; (b) there could be many images of the same object; (c) the single image could represent many objects.[105]

Corresponding to these properties of an image were the properties of a conscious subject evident in a human, whether Neanderthal or Sapiens, who made and beheld them. To make an image one must already be able to behold it as an image; to behold an image, one must be able to produce it. Skill at producing and beholding was a different matter: obviously not all humans were artists, art "appreciators," or art critics. Jonas's point was that, if you could behold or produce an image, however crude or sophisticated, beautiful or ugly, however fully or partially you understood the significance of what you beheld, you were nevertheless the kind of being to whom the faculty of being able to represent belonged.

The capability of image-making suggested a clear distinction between animal and human perception: humans could see "mere likenesses," whereas animals could not. That was why scarecrows and duck decoys work. Or as Hannah Arendt once remarked, it was easier to experiment with animals than with humans because

humans might (and probably would) cheat.[106] On the other hand, considering that ducks and geese could learn to avoid decoys, one might expect that Neanderthals would decoy only once. But so might Cro-Magnons. More philosophically put, humans could immediately make nonperceptual distinctions so that the similitude of a scarecrow to a human or of a decoy to a duck became the object of apprehension. In short, Sapiens certainly, Neanderthals probably, could separate form and matter. Accordingly, when a human made an image, translating a material likeness into a visual reality, the image became detached from the object and the meaning, the *eidos*, became independent of the thing. In other words, vision, whether animal or human, was a kind of stepping-back from the immediate environment in order to be free to survey it; a second stepping-back took place when humans saw an object as an appearance, and so distinguished from reality. In this way humans could ponder things in the imagination, and the things pondered were not material. This new freedom combined distance and control and, because the representation was external, in the world, an image was sharable common property. If the argument of Thomas Wynn and Frederick Coolidge was sound—an argument made before the existence of Neanderthal art was accepted—there was no obvious reason why Neanderthals might not also have learned to become artists.[107] But even if they did become artists, they certainly did not do so to the extent that Sapiens did. Is this a difference of degree or of kind?

This particular artistic difference shared by Sapiens and Neanderthals was significant because the artist saw more than the nonartist, not because she had better vision, but because she remade what she saw in the likeness of things, which is to say, the artist had a standard of truth: images could be more or less true to their objects. But images could also represent "new" objects, objects of the imagination. This did not mean the images were simply imaginary, because they still must be produced, which is to say, the image-maker's body, his or her animal motility, was subject to the discipline imposed by the *eidos* of the image, namely, its meaning, which was a "freely chosen, internally represented and purposely projected *form*."[108]

From the argument just summarized Jonas drew a number of conclusions. First, "the gap between animal world-relation and the crudest attempt at representation is infinitely wider than that between the latter and any geometrical construction. It is a

metaphysical gap, compared with which the other is one only of degree."[109] There was no reason to think that Neanderthals were not on the same side of that metaphysical gap as Sapiens, even if they did not fully actualize the implications, which is to say, the difference between them and Sapiens was in fact one of degree.

Second, once the distinction between true and false likeness had been made, image-making became "a pristine form of active truth-effort." This meant that pictorial representation was a "fundamental exercise in man's truth-effort in relation to the visible world." The old definition of truth, *adequatio intellectus ad rem*, the correspondence of the mind to the thing, "appears here in the more elementary form of *adequatio imaginis ad rem*,"[110] the correspondence of the image to the thing.

Perhaps Jonas's most important insight was that, if image and truth were based on a separation of *eidos* from given or existing or empirical reality, this separation also introduced a new level of mediation in the relationship of organism to environment. With plants, metabolism made possible the direct commerce of the organism with the environment; animal life served metabolic needs by way of the relations of the organism to objects in space that were desired, obtained, and acted upon before entering the metabolic system. With animal being, sight was crucial in the relation between the animal and the environment and was extended by the capacity of humans to produce images. Looked at from the achievements of animal perception, human image-making looked like an extension of perception. The effect, however, was that humans ceased to see things directly. The images became symbols, not just representations of objects. This new dimension of mediation enabled humans to reflect so that the subject present in the objectified image appeared to itself, the human, who then could raise these questions: What is my place in the cosmos? What is my place in the grand scheme of things? And then humans could judge their conduct in light of the image of what the human place in the grand scheme of things actually is. That is, human consciousness is participatory and also perceptual. "Willingly or not," Jonas said, human consciousness "lives the idea of man—in agreement or in conflict, in acceptance or in defiance, in compliance or in repudiation, with good or with bad conscience. The image of man never leaves him, however much he may wish at times to revert to the bliss of animality."[111] By this argument the images in the caves presented an image of human being. But what was that image? What did it *re*-present?

Three additional remarks might be added to this analysis of Jonas's argument. First, for Jonas, Darwin's great insight was found in his hypothesis that by means of natural selection he could account for how the forms of organic life, both plant and animal, could manifest the appearance of design and purpose without there being any external teleology at work. That is, Darwin provided a way of conceptualizing evolutionary phenomena without reference to design or external intention. That this phenomenalist account was endowed with the metaphysical weight of materialism was unsurprising but it was also unnecessary. The reason, very simply, was that Darwin's account also established continuity of *all* forms of being owing to evolutionary descent from a primordial substance.

Two implications were significant. First, "evolutionism undid Descartes' work."[112] Thereafter the issue was not human "descent" from nonhuman life forms but that the dignity of human being or of human inwardness was extended to other animals. Thus the Cartesian "metaphysical isolation" of human being was ended. Second, the metaphysical implications of the assertion that the same primordial substance existed throughout the universe, which Jonas called "substantive monism," whether bolstered by claims of a big bang or not, might be reversed. Phenomenalism need not entail materialism. On the contrary, this same primordial substance present in planets and galaxies also contains the *potential* for desire, pleasure, beauty, and love, realities that are indubitably present in the human world. That is, if we accept, say, Darwin's account of evolution as a lengthy and changeable process without a plan or a goal, whether creative or destructive, then we forsake all dualism of matter and mind. Moreover, the physical scientists, including biologists who think they are physicists, could not consider all the implications of this restored substantive monism because they could consider only physical data. Granted that Darwinian accounts could explain subtle organic structures and phylogenic development without referring to any "vital force," which would be a kind of backdoor concession to dualism, this made the experienced reality of subjectivity and purpose, which were part of human being, all the more enigmatic. For natural scientists, confined to the study of material nature, this was a problem to be ignored or reduced to physics. Philosophers could not follow their lead because purpose and subjectivity, emotion, and the paradoxes of consciousness were part of an internal world that was as real as the external

one. Unlike the physical scientists, the philosophers could not abandon substantive monism because they sought to understand the whole of reality.[113]

A second comment. Notwithstanding its ending the "metaphysical isolation" brought on by Cartesian metaphysics, Darwinism also entailed a metaphysical reversal. With post-Renaissance European thought, nonlife had become the rule and life the exception. But then, how could life have ever appeared in the world? Even more of a problem, how could life be reduced to nonlife? Originally, mechanistic views of science did not raise the question of genesis because the practitioners, generally speaking, were theistic. But then, first with deism and then when the implications of deism were grasped, the argument was advanced that the origin and the result did not differ ontologically, but merely accidentally, as antecedent and subsequent events. The substratum remained the same substance, the producing reality no different than the product. This was a major change from the previous metaphysical assumption, that the cause was superior to the effect, that the originating agency was more powerful or more real than the things originated by it. In a word, the question of a nonphenomenal, nonaccidental, or nonhistorical *arche* was still present.[114] But not for long.

The notion that all formations in nature were accidental rather than teleological even though they were also causally necessary—Jacques Monod's "chance and necessity"—meant that nothing was either intentional or final. This assumption "applies in the Darwinian extension of Newtonian physics also to the *life* forms, not excluding *man*."[115] Just as inanimate nature produced structures and entities as the result of a history that continued beyond any particular given configuration, so that any one complex was a point en route to another, and none entailed the expression of an idea, so too with the living world, a continuous mechanics was at work. Among its products were humans, and humans harbored purposes and intentions, goals, joy, hate, grief, and love, but none of those realities had any effect on the process that resulted in us. Random mutation and natural selection resulted in this odd sort of being, but nothing in nature, the blind process of indifferent forces, ever aimed at producing humans or invested anything in seeing humans emerge at the end of the process. Indeed, the process has not ended, and one promise of molecular biology and genetics may be that human beings could direct it. Toward what is a question we need not ask. The

implications of the human capacity of acting into nature, whatever its metaphysical incoherence, was the subject matter of Jonas's later reflections, particularly in *The Imperative of Responsibility*.[116]

A third implication is this. Should we succeed in banishing metaphysics and "religious" speculation from our minds, we should remain human, but diminished, and, most important, we should be blind to the understanding of past history. This is, one soon discovers, a major defect of many current paleosciences.[117]

Jonas's argument may be summarized along the following lines. Human consciousness is rooted in the organic processes of the brain, because the brain is composed of chemical and physical constituent elements that enable the self-renewal of organic, living tissue to occur. Such is the necessary homage to modern physiology. But at the same time the autonomy of human consciousness is prefigured in the qualitative attributes of organic being. Such is the necessary acknowledgment of the difference between organic being and nonorganic matter. The autonomy of human consciousness (and perhaps of animal awareness too) enables us to distinguish nonorganic matter that had never been alive and dead organic matter; in this context death is the presence of nothingness in the human world, a sign of another order wherein things come into being and whereto they are swept away. For Cartesians, matter was nothing but physical extension, and mind had no physical extension at all, so that such an argument was unintelligible. But nothing in reality compels us to be Cartesian. Indeed, Jonas's argument restored the relations of biology and anthropology to the position they held for Kant, which was no small achievement.

Voegelin

Like Jonas, Eric Voegelin developed his philosophical anthropology from within the early twentieth-century German intellectual milieu. Indeed, in his later writings, Voegelin accepted large parts of Scheler's argument practically as a matter of course. For example, in his 1965 talk, "In Search of the Ground," he summarized a basic Schelerian anthropological insight and did so with beguiling simplicity:

> Man belongs to inorganic being; with a part of his existence he belongs also to the existence of the psyche; man has also a life of

> the spirit, a life of reason. The question then simply is: By what is man distinguished from animals, from plants, from inorganic matter? The answer: by his life of reason. Therefore conformity to the life of reason is what is best for man in order to live out his nature. It is the life of reason, in the sense of a differentiated criterion of man that gives the guide for preferences. All preferences on the merely biological level of instincts and urges, or on the merely psychological level of hedonism or satisfactions or pleasures, or on the merely metabolic level of having good food, are on a lower level, which is not worth being considered as the ultimate purpose. The ultimate purpose is the life of reason, whatever that is.[118]

The apparent tentativeness of the last sentence did not indicate a hesitation regarding the life of reason so much as an abundance of caution because the meaning of the term "the life of reason" was not self-evident and thus had to be developed with analytical precision, which Voegelin did on other occasions.[119]

This relatively late formulation of the problem of "the nature of man" relied on a host of terms from Western Christianity and philosophy to evoke what that nature entailed. Chief among them was the term already encountered in the discussion of Scheler, the Ground of Being. In his 1965 formulation, Voegelin described this Ground as "an experienced reality of a transcendent nature toward which one lives in a tension." Accordingly, "the experience of the tension toward transcendent Being is the experiential basis for all analysis in such matters." Ever since Heraclitus, this experience had been described concretely in terms of love, hope, and faith. From St. Augustine to Henri Bergson, the experience had been symbolized in terms of "openness," the premise of which is that we all experience ourselves as not existing on our own but "as coming from somewhere even if we don't know where."[120]

In addition, the experience of tension toward the Ground of Being was a participatory engagement that took place by means of or by way of the *psyche*, as the Greeks called this part of human being. To simplify still further, one might say that the *psyche* is the sensorium of transcendence; we have self-respect because we respect that organ in ourselves; we love or respect others because we acknowledge that they too participate in the divine. To summarize still further, "it all comes down to the question: what is the ultimate purpose toward which we are rationally oriented? This leads us to the question of the nature of

man, and to the answer that his nature differentially, as against other creatures, is openness toward the Ground. *That* is reason: openness toward the Ground."[121]

In a conversation with Raymond Aron and Lucien Goldmann in 1961, Voegelin explained his views in a relatively clear and simple way.

> E. Voegelin: One could, undoubtedly, respond that the nature of man does not change, but that nature has a history.
>
> L. Goldmann: How do you prove that?
>
> E. Voegelin: We are not here on ground that allows of proofs in the proper sense of the term. The term *nature* is a philosophical term and, by definition, nature is precisely that which does not change.
>
> L. Goldmann: And if, on the contrary, I define the nature of man by change?
>
> E. Voegelin: The idea of a human nature that would change resembles, for me, the idea of a square triangle.
>
> R. Aron: Admitting that you can define the nature of man as a reality that does not change, is it necessary to say the same regarding the nature of societies?
>
> E. Voegelin: The nature of man in society does not change, insofar as nature [is concerned]; but there is a place, however, for an amplitude, for a historic development. That which you understand by a change of nature is simply history. But the problem of nature is always there, and it is this nature which is the object of our analysis.
>
> L. Goldmann: But since you admit that nature has a history, and since this history is not finished and not a cyclical repetition, how would you be able to know the true nature of man? Does it not depend on a multiplicity of factors which are unknown to us?
>
> E. Voegelin: Precisely—every attempt to know the nature of man, which begins from his history, is doomed to failure. History is indefinite: it has no essence; and we never know but a limited portion of it. But in the interior of the horizon of our experience, we can discern no change in the nature of man.[122]

These relatively late and often opaque formulations continued an argument that Voegelin first developed in his 1933 books on race. Even then, however, he distanced himself from Scheler's

"overemphatic" separation of the spirit from the sphere of life.[123] He developed instead his own "unified" version of the internal organization of human being that was substantially the same as was developed by Jonas a few years later.

"Man's total being," Voegelin said in *Race and State*, "is the unified form that extends from the high point of the spirit through the levels of animal and vegetative animation down to inanimate matter. The question of the nature of man as a whole can therefore not be answered by saying that he is spirit; he is spirit and at the same time also animated body and inanimate matter." Part of the problem of achieving clarity without recourse to metaphor and analogy was simply linguistic. In German, the word *Körper* referred to the material qualities of the human form, whereas *Leib* designated the animated human form: "Animals have bodies in the sense of *Körper* and in the sense of *Leiber* and nothing more; human beings also have *Körper* and *Leiber*, and in addition they have the spiritual form [*Geistgestalt*] of the body." For this latter reality there was no conventional term either in German or in English. Nevertheless, the realities of matter, soul, and spirit could be experienced directly as "ensouled matter" and, at the same time, as "spirit-permeated matter and body." Because the human spirit was human and so embodied, "we will always have reason to state that man as a whole is involved in the process of the succession of generations and that all his traits, including spiritual ones, are related to so-called hereditary transmission." That is, human beings despite their physical, mental, and spiritual variety remained "unified forms within the same structure."[124]

A number of significant implications followed. First, humans are open to the contradictory experiences of being determined by our genetic "inheritance" and being spiritually free. And both sets of experiences have to be considered within "the ontology of man or, as it is called today, philosophical anthropology." Heredity thus is not simply the transmission of identical material "but a process of propagating life forms that react identically [*reaktionsidentischer Lebensform*]." In principle, we could know nothing of this process, notwithstanding our knowledge of chromosomes, cell division, or, today, DNA and associated microbiological insights. This is because "what the methods of the natural sciences can grasp always concerns only the mechanism of the process" and not its meaning. Regarding the latter, we are at liberty either to think that everything was

determined, that it was all an interplay of Monod's chance and necessity, or to think that an "unknown power intervenes at each moment of conception," or anything else we might imagine. But none of those possibilities had anything to do with science. Voegelin's criticism of some race "scientists" who tried to find characteristics of personality or race in genetic material was filled with the kind of irony that Hegel reserved for phrenology.[125]

This conclusion did not mean that physical anthropology was not a legitimate field of inquiry. On the contrary: physical anthropology was entirely a legitimate science but it could not claim to have any relevance to the facts of the spirit. "The question of relevance is not a scientific question but one of metaphysical speculation"[126] and so must be considered only on those grounds, which was an argument first made by Kant. The Kantian argument (and the equivalent philosophical arguments of Lonergan, Scheler, Jonas, and Voegelin) has a bearing on such politically questionable terms as race but also on the more immediate issue of distinguishing Sapiens from Neanderthals. Regarding race, Voegelin argued, the term is to be understood "as a biological subunit of the species *Homo sapiens*; it refers to the addition of morphological and physiological groups of traits that are allegedly typical of the subgroups, called races, to the general traits of the human species." This attempt to classify human beings in terms of physical traits and groups of traits is reasonable in the sense of being empirically tenable because physical traits and groups of traits are more or less constant in the sense that they follow Mendelian laws of heredity in the sequence of generations, along with the distribution of such traits in terms of separation and combination when individuals of different types interbred. Moving from theoretical biology to "the historical-philosophical thesis that the spiritual qualities [*Geistqualitäten*] connected with particular groups of traits in the pure case are permanently effective causes of history" and that the spread or suppression of one or the other race is related to significant consequences for the history of society, of states, and of the spiritual worlds was not a question of biology at all. This "historical-philosophical thesis" regarding the spiritual qualities of groups of humans Voegelin called "political race theory."[127]

Voegelin's conclusion regarding the connection between theoretical biology and "political race theory" was unequivocal: it is impossible to establish "pure lineages as the basis of the descriptive classification of human being," so no genuine race

theory or race science is possible. When one examined the more cautious analyses of anthropologists for whom groups of traits in human populations "have merely empirical significance," another problem arose: "As a natural science, anthropology wants to use basic systematic concepts developed by biologists for the animal and plant world, but it gets into difficulties because, quite simply, human beings are not merely beings of nature, and their physical aspect in its group formation and selection is also determined by the higher principles shaping the formation of societies and states." And these "higher principles," Voegelin said, were shaped by the human spirit.[128]

In *Race and State*, Voegelin criticized the claims of biological purity (unmixed descent, for example) as being nonexistent. He reinterpreted the notion of purity in the direction of a purity of (historical) "style" that was already an expression of a general likeness or a spiritual form or "idea." By "idea" Voegelin meant "the real unity of the plant, animal, and human individual and collective wholes that are articulated in spatial and temporal variety." For example, the "person" was an idea in relation to the maturation of his personal life (*Lebensablauf*); "humanity" was an idea in relation to human diversity; an animal or plant species was an idea in contrast to individuals belonging to the species. "Our understanding of *idea*, thus, is not a concept but the real substance that appears as the *one* and the *many*."[129] As Voegelin argued in the opening chapter of *Race and State*, this Kantian "idea" of a manifold diversity can be viewed either as part of its being or in its totality. So far as human being is concerned, it is possible to grasp the idea of man as spirit, but also as animal; it is also possible to understand the idea of man as a human totality. One way or another, however, ideas are also historical insofar as they must be understood as developing over time.

This argument could be applied to the problems of Upper Paleolithic humanity at least by analogy with later history. For example, ever since they were "discovered" by modern Europeans, the existence of "primitive" peoples has been a source of unease insofar as they were studied by Europeans in terms of their undeniable deviation from European norms. Indeed, these studies, no less than European actions, have presented a challenge to the idea of man as a unified whole being (*Wesens-Einen*). Voegelin said, "At this point, explaining the different manifestations of the human being in its essence as caused by physical differences is always tempting, and most especially so

where our knowledge of the two types, the standard European and the primitive, is not limited to merely seeing them juxtaposed but where they enter into social relationships—a relationship of rule and obedience" that typically has resulted from conflict and violence. Colonization and slavery underlined ethnic or race differences. "Ideas about race differences were even carried to the point of metaphysical speculations that abolished the unity of human being and assigned a unique ontic area to the colored races between man and animal."[130]

However much we might deplore racism as an accompaniment to conquest, the same problem existed with respect to the replacement of prior (human) members of the species *Homo* by *Homo sapiens*. Most notably this "replacement" would include the colonization of Europe by those Sapiens later called Cro-Magnons. That is, "primitivity" or some cognate concept coincides with differences in power among communities. Since human history has been to a significant degree the history of war, and so of victory and defeat, this same history could be interpreted in principle in terms of race. One way or another it seems to be extremely difficult to expunge biology from history, notwithstanding the insights gained from philosophical anthropology concerning the ontology of human being. If one prefers, one may recast the previous sentence: it is difficult to remove the misapplication of biology to history. But that simply meant we have an additional problem to be understood, namely, what accounts for the persistent misapplication of biology to history notwithstanding the prohibitions against doing so developed on the basis of philosophical anthropology?[131]

At the beginning of his *History of the Peloponnesian War*, Thucydides expressed an interest in migration as a prelude to conquest. Likewise, Voegelin pointed out, "the 'aboriginal people' is the boundary concept designating in each case the peoples about whose migrations and conquests we know nothing." As the study of history, including paleohistory, advanced and new sources revealed that those so-called aboriginal people also migrated, the "aboriginal people" are "pushed back one step." The problems with "aboriginality" are obvious enough. If the aboriginal people encountered by the conquerors were themselves conquerors of a previous aboriginal people, then, as conquerors, they are indistinguishable from the people who conquered them. And if not, if the aboriginals conquered by the latecomers were essentially different, "assigned to a unique ontic

area . . . between man and animal," then they were not, properly speaking, people. "The difficulty," Voegelin concluded, "comes from the fact that, beyond the 'migrations,' the mystery of the origins of humanity arises."[132] And mysteries are not dispelled by science, especially not by biology, so much as comprehended and expressed by myth and narrative.

The Compactness and Differentiation of Consciousness

Voegelin's philosophical anthropology was not comprehensive in any absolute sense because one of its elements consisted of human historicity. It was, however, both extensive and coherent and, in any event, is the most comprehensive known to me. To use the simple formulations he made in his 1961 conversation with Goldmann and Aron, "human nature," in the basically Aristotelian sense Voegelin used the term, was inherently unchanging. Voegelin would have agreed with Simpson: gorillas were not abnormal humans; they were gorillas, instances of the appearance in the world of "gorilla nature." Distinguishing between the two kinds of "natures" was an act of scientific judgment based on more or less articulate criteria of philosophical anthropology. In principle, the same form of judgment is involved in distinguishing Neanderthals and Sapiens and different kinds of cultures among Sapiens.

A second observation, which Voegelin also made to Goldmann and Aron, was that human nature had a history or that there existed a "historical development" of human nature of which human beings were conscious and that they typically referred to simply as "history." Such a "history" includes what we have called prehistory or paleohistory, very early history prior to the existence of written accounts. Voegelin referred to a significant aspect of this problem in terms of the compactness and differentiation of human consciousness.

Perhaps the simplest way to discuss the problem of compactness and differentiation of consciousness would be to refer to Voegelin's introductory remarks to the first volume of *Order and History*, titled *Israel and Revelation*.[133] The opening words of the preface are as follows: "The order of history emerges from the history of order. Every society is burdened with the task, under its concrete condition, of creating an order that will endow

the fact of its existence with meaning in terms of ends divine and human" (19). Voegelin used the term "order" in a number of different ways.[134] In his *Autobiographical Reflections*, he provided a simplified summary: "By *order* is meant the structure of reality as experienced as well as the attunement of man to an order that is not of his making—i.e., the cosmic order."[135] In *Israel and Revelation*, order was described as "not an eternal status of things, but a transition from chaos to cosmos in time. Once created, order required attention to its precarious existence, or it will relapse into chaos" (348).

Voegelin's narrative, the "history of order," consisted of his discussion of the several accounts by human beings to endow the fact of their existence in communities with meaning. These communities of meaning he termed "political cosmions," small versions of the greater cosmos of which humans were a part and to which they must attune their existence. What Voegelin meant by "the order of history" initially referred to the intelligible connection of the sequence of symbolizations used to express the meaning of specific and concrete social order, starting with the great agricultural empires of the ancient Near East, namely, Mesopotamia and Egypt. In turn, the cosmological empires served as the context for those later symbolizations of order achieved by the Israelites and the Greeks, and conventionally referred to as revelation and philosophy.

The introduction to *Israel and Revelation*, titled "The Symbolization of Order," contained what Bernhard W. Anderson quite properly called the "presuppositions of Voegelin's analysis."[136] The introduction opened with this announcement: "God and man, world and society form a primordial community of being" that was a datum of experience "insofar as it is known to man by virtue of his participation in the mystery of its being" but was not a datum of perception akin to the perception of things in the world. That is, human beings are not so much spectators as actors, participants "in the drama of being" simply by virtue of their existence. But they remain ignorant of their role in the drama, of the author of the play, and even if there is an author. Voegelin took the image of a play most immediately from Johan Huizinga's *Homo Ludens* and more remotely from Plato. Having such a role in such a drama was "disconcerting," to say the least, and human beings often preferred "the less bewildering routine" of ordinary and everyday life. The problem, however, was that nonparticipation is not an option, and uncertainty

regarding the play and the role of humans in it is both a given and is partially "illuminated" by consciousness. That is, human beings participate in this "primordial community of being" from the inside, which means both that knowledge of the whole of this community is precluded and that therefore so too was complete knowledge of the part, namely, knowledge of the human being that experienced the participation. "This situation of ignorance with regard to the decisive core of existence is more than disconcerting: It is profoundly disturbing, for from the depth of this ultimate ignorance wells up the anxiety of existence" (40). Anxiety did not, however, induce paralysis because humans are able to evoke, literally "to call forth," symbols to express the experience of participation and thus to obtain some kind of knowledge of the order of being or of the order of reality. Moreover, for Voegelin, this capacity to evoke meaningful symbols is common to human beings as human beings. It constituted the decisive distinguishing attribute of human nature.

Initially, Voegelin argued, humans moved beyond the anxieties of existence by creating symbols to render intelligible the relations among the constituent elements of the primordial community of being. First of all, we do know *that* we participate in being, even if we do not know *why* or *whence*. Moreover, we are aware of what he called the "quaternarian structure" of being —the divine, cosmic, human, and social fields of being. Following Henri Frankfort, Voegelin characterized this quaternarian structure as consubstantial.[137] By consubstantiality was meant a single ordered "stuff," a "substance" that (as with Jonas) is at once divine, cosmic, vital, political, anthropological, and so on. Within a consubstantial order, the glorification of God would also be the glorification of the people, the rulers, the land, life, and so on. As Voegelin once put it, consubstantiality could be visualized as a single homogeneous round cosmic pudding.[138] The only experience that was unequivocally clear was the "predominance of the experience of participation," where "things are the same and not the same, and can change into each other" (41).

Within that somewhat inchoate awareness of consubstantiality, second, "is the preoccupation with lasting and passing" of the several partners that, notwithstanding their consubstantiality, exhibited differing degrees of durability. Individuals perished more quickly than families, clans, or societies; societies more quickly than the world, which may well have been created by the even longer-lasting gods. This hierarchy

of durability furnished additional information about human participation in being. The more lasting existences "provide by their structure the frame into which the lesser existence must fit" or be extinguished. That is, success in existence for humans depends on their "attunement" to the more durable elements of life, society, world, and gods (41–42). The imagery of drama, participation, and attunement, as William M. Thompson observed, emphasized mystery, action, and passion, respectively.[139] The drama is a mystery play; our participation is active; our attunement presupposes a reality to which we were passively attuned.

In other words, we may not know why or how we come into existence, but we do know that so long as we exist we are mysteriously consubstantial with the being to which we return.[140] Moreover, we know that we need to attune ourselves to the more comprehensive elements of the quaternarian structure of being. Attunement, that is, is experienced as an obligation. Just as we may not fulfill our obligations, so we may lose by default the attunement of our consciousness with reality. Anxiety in this context, thus, means more than fear of death because, for humans, existence has already been bounded by death, by preexistence as much as by postexistence. Anxiety, therefore, amounts to a horror at losing the precarious foothold that human existence enjoys as a partner in being that we experience so long as we exist. "In existence we act our role in the greater play of the divine being that enters passing existence in order to redeem precarious being for eternity" (43).

A third feature of the process of symbolization is "the creation of symbols that interpret the unknown by analogy with the really, or the supposedly, known." Gradually what was essentially unknowable can be distinguished from what was knowable. Accordingly, "the history of symbolization is a progression from compact to differentiated experiences and symbols" (43), which does not mean that differentiated experiences were permanent achievements. Voegelin was no progressive. The most basic and chronologically earliest symbolic form expressed the meaning of social order as an analogue of the cosmos and its visible order. Social order as microcosmos was most fundamental because "earth and heaven are so impressively the embracing order" into which human existence must fit itself if it were to survive. Thus the cosmos and its order suggested obviously enough the model of all order, including that of human and social existence.

Accordingly, “vegetative rhythms and celestial revolutions function as models for the structural and procedural order of society” (44).

A fourth typical feature of this early symbolization was an awareness of the analogical character of symbolization and of symbols, along with awareness that the order of being could be symbolized in many different ways: “The rhythms of plant and animal life, the sequence of the seasons, the revolutions of sun, moon, and constellations may serve as models for analogical symbolization of social order. The order of society may serve as a model for symbolizing celestial order. All these orders may serve as models for symbolizing the order in the realm of divine forces. And the symbolizations of divine order in their turn may be used for analogical interpretation of existential orders within the world” (45). Whatever conflicts among symbolisms may occur, they could be borne with equanimity: “Contradictions do not engender distrust in the truth of the symbols” because the experience of contradictory or contrasting symbolisms is invariably accompanied by the awareness that the order of being could be represented analogically in more than one way. “The symbols are many, while being is one” (45–46). The evidence for Voegelin’s reflection on cosmological symbolism was based on texts compiled from the early agricultural empires. During their later history, with the growth of political summodeism and what he later called historiogenetic myths, this early toleration was replaced by a more inflexible symbolism (46–47).[141]

Voegelin revisited the problem of the “primordial community of being” in his later work using the term “primary experience of the cosmos,” which he considered more accurate than the early 1950s language of *Israel and Revelation*. The initial discussion took place in his unpublished 1968 paper “Anxiety and Reason”; the first published use of the term “primary experience of the cosmos” was in 1974 with the publication of *The Ecumenic Age*.[142] In a cosmological society, he said, the primary experience of the cosmos “will dominate all experiences of particular sectors of reality” as a distinct “style of truth” (57–58). This cosmos, as was clear from “Anxiety and Reason,” “is neither the external world of objects encountered by man when he has become a subject of cognition, nor is it the world that has been created by a world-transcendent God. It rather is the cosmos of an earth below and a heaven above, of celestial bodies and their movements, of seasonal changes, of fertility rhythms in plant and animal life, of

human life, birth, and death, and above all, as Thales still knew, it is a cosmos full of gods" (59). The understanding of history in the early agricultural empires was dominated by this interdependency. The ruler acted by divine mandate, for example, and victory and defeat in war or prosperity and ruin at home were the result of divine dispensation. The king mediated the cosmic order that flowed from God to human beings.

Unfortunately, war tends to be a zero-sum game so that one king's victory, which confirmed the righteousness of the divine-cosmic order, would not be seen that way by the defeated. Moreover, no army has ever been forever victorious, so that, eventually, the course of events would prove disappointing to the rulers of a now traditional and perhaps even complacent empire. Likewise, fat years are followed by lean ones. For millennia, however, the "cosmological style" of truth was able to endure despite the vicissitudes of imperial institutions for the evident reason that no alternative was available to challenge the primary experience on its own ground. And since the ground of cosmic existence was not itself an existing thing, a sense of the precariousness of the actual order, and indeed of order as such, was always present. In other words, even within the cosmological style of symbolization, humans were aware that analogues based on the existing things of the world were never entirely adequate to express the reality of the divine partner upon whom the entire community of being depended.

Only when a human being sensed the ontological gulf that separated divine from mundane existence and found a way to symbolize the cosmic-transcendence of the divine originating, ordering, and preserving source of being would the reason for the inadequacy of analogical symbolization be clear, and a challenge to the cosmological style gain experiential credibility. In short, a challenge to the cosmological style could arise only when the cosmic-transcendent God was revealed by somebody (or reveals himself) as the creator of the cosmos and everything in it—or alternatively, when a philosopher searches for and symbolizes his search for the Ground of Being. But even these kinds of spiritual outburst did not simply dispose of the primary experience so much as prompt a blending of the old cosmological and new revelatory or philosophical symbolisms. Notwithstanding our contemporary knowledge of astronomy, the sun still rises in the east and does so meaningfully: it heralds the start of a new day. By the same token, that there is a new day is always a source of

wonder. Why should there be a new day? Would not permanent night be so much simpler? But such questions, we know, are expressions of a search for an *arche*. They never go away.

One implication is that, with the discovery of cosmic-transcendence through experiences we conventionally describe in terms of revelation and philosophy, something had changed, but what? First of all, the experience of cosmic-transcendence disrupted the primary experience of the cosmos so that the community of being, which hitherto had been more or less adequately articulated or expressed by means of cosmological symbols, now must take into account this newly discovered structure of reality. How to symbolize the *arche*, the Creator, the Ground of Being remained a major problem in the sense that a persuasive narrative is never given with experience. Second, the site of this experience was a movement in the soul, or *psyche*, of a human being such that human and divine being were understood as persons facing one another in such a way that "its mutuality is active and passive on both sides, so that the seeker and the sought, the finder and the found can be predicated of both God and man."[143]

Several further implications follow from this experience of movement in the *psyche*. First, divine being is transformed into both a "Within" of the *psyche* and a "Beyond" of the cosmos. In contrast to the cosmos full of gods, the cosmos is dedivinized so as to become a world that is *immanent* in relation to a divine being that is *transcendent*. In short, the cosmic pudding is now divided into a divine, cosmic-transcendent being and a world. At the same time, because the movement or change occurred in the human *psyche* or in human consciousness, new symbolisms were needed to express the newly discovered relation of human to divine being. This process of discovery of a new structure of being, identified by the linguistic indices of immanent and transcendent, was called by Voegelin the *differentiation* of experience and symbolization. In light of this differentiation of experience and symbolization, the primary experience of the cosmos and its cosmological symbolism were described as comparatively *compact*.[144]

The older and newly differentiated truths are nevertheless closely related since they were two truths about the same reality, which is to say they were equivalent symbolizations distinguished only by their relative compactness and differentiation. Voegelin returned to this problem of compactness and differentiation in

The Ecumenic Age, which was the fourth volume of *Order and History*.[145] Here the emphasis of his discussion of the primary experience of the cosmos was slightly different. The cosmos was still that of Thales, a whole (*to pan*) with an above and below, to be sure, but one that remained consubstantial, a "togetherness and one-in-anotherness" (118–19). The actions of humans, in war for example, remained the execution of divine commands, but "the pride inspiring the reports of victory can barely veil an undercurrent of anxiety, a vivid sense of existence triumphant over the abyss of possible annihilation" (120). Indeed, the vicissitudes of imperial order could always engender doubts regarding the stability of the cosmos and the possibility of a failure of the cosmic gods. The Egyptian texts of the third millennium provided many examples of despair and alienation, but none that evoked a new truth of existence beyond the cosmic whole. Changes to the style of cosmological symbolization, Voegelin wrote, "can come only through noetic advances that let more compact symbols appear inadequate in the light of more differentiated experiences of reality and their symbolization" (121). By emphasizing "*noetic* advances" rather than the experiences of revelation, as he did in "What Is History?," Voegelin also wished to emphasize the equivalence of philosophy and revelation as providing more adequate, which is to say, more differentiated, symbolizations. In turn, more differentiated symbolizations were needed to express persuasively more differentiated experiences.

In *The Ecumenic Age*, Voegelin reiterated his earlier argument, only this time from his own differentiated position of a philosophy of historical order. The intracosmic areas of reality experienced by a compact cosmological consciousness

> provide one another with analogies of being whose cosmological validity derives from the experience of an underlying, intangible embracingness, from a something that can supply existence, consubstantiality, and order to all areas of reality even though it does not itself belong as an existent thing to any one of these areas. The cosmos is not a thing among others; it is the background of reality against which all existent things exist; it has reality in the mode of nonexistence. Hence, the cosmological play with mutual analogies cannot come to rest on a firm basis outside itself; it can do no more than make a particular area of reality (in this case: society and its order in history) transparent for the mystery of existence over the abyss of nonexistence. (122)

Existence out of nothing was not, however, a source of anxiety, as it is in contemporary existentialism, because it was accompanied by an underlying trust in cosmic order: the sun really will come up tomorrow; the cosmos really is an order. Even so, "the experience of a cosmos existing in precarious balance on the edge of [an] emergence from nothing and [a] return to nothing must be acknowledged, therefore, as lying at the centre of the primary experience of the cosmos" (123).

The apprehension of this instability at the center of cosmic order was implicit prior to the differentiation of the cosmic-transcendent divine reality and the immanent world. Voegelin's point, however, was that even an implicit apprehension was real, notwithstanding its relative inarticulateness. There existed what he called "cracks" in the cosmological order that later resulted in the dissociation of the cosmos into a dedivinized external world and a world-transcendent God. Even so, and this must be emphasized as constituting a major element of Voegelin's achievement, the primary experience between existence and nonexistence is coeval with human being. It therefore remains with us today, as it did in Paleolithic times.[146]

We may summarize this "Voegelinian prelude" with the observation that, if Upper Paleolithic humans were as human as we are, it must be possible to specify our commonality. This was why prehistorian Colin Renfrew noted that beyond the difficult task of gathering data was the even more difficult one of interpreting it. What made interpretation more difficult, he said, was the fact that "prehistory is the science of us. It is the discipline by which we study ourselves and investigate the way we have come to be as we are. The prehistorian keeps on having to reevaluate what might seem to be the easiest proposition in the world: who are we? Or rather, what are we? Just what does it mean to be human? What at first might seem obvious becomes, on examination, a more difficult question."[147] Even so, this difficult question cannot go unasked. Moreover, criteria of relevance, if not exactly an answer, can be found in the arguments of philosophical anthropologists, of which we have provided exemplary instances. In each case, not the details of the argument were significant, but the kinds of questions these philosophers raised were what mattered. In addition, what made these remarks a Voegelinian prelude was his concept of compactness and differentiation of experience and symbolization

within what he called the quaternarian field of being.

When Voegelin wrote the first volume of *Order and History*, he noted that the agricultural empires of the ancient Near East "were ordered in the form of the cosmological myth," which form, "so far as we know, is generally the first symbolic form created by societies when they rise above the level of tribal organizations."[148] As an observation regarding the state of science in the early 1950s, this may have been an approximately adequate remark.[149] Two generations later it was accurate neither with respect to modern tribal societies nor with respect to the early preimperial societies of the Neolithic and Upper Paleolithic. Even so, Voegelin's approach to the problem of compact and differentiated experience and symbolization can be applied to materials that long predated the ancient Near Eastern empires. That Voegelin would not have disagreed is suggested by his interest in the work of Marie König, which we will examine in chapter 2.

PART II

The Bold Outsiders

CHAPTER 2

Marie König

Eric Voegelin and Marie König

During the late 1960s, Eric Voegelin was working on the problem of the primary experience of the cosmos. In October 1968, he attended a conference of the Academic Institute of Rome where he heard Marie König deliver a paper on the continuous evolution of prehistoric civilizations.[1] She began by noting that nineteenth-century evolutionary doctrine meant that there were no "permanent values," which question or topic was the ostensible reason for holding the conference. On the contrary, according to nineteenth-century opinion, the first men were closer to animals than to us. König disagreed with this approach and its basis, a singular focus on economic production and technology, in this case, stone tools. According to König's philosophical anthropology (she did not use the term in this paper), such an approach ignored the "spiritual development" of humans that was present in the development of tool technologies. The simplest choppers presuppose an idea and a creative plan of manufacture so that the aesthetic was from the beginning "tied together" with the utilitarian. Moreover, later specialization of "material documents," including tools, necessarily presupposed a prior nonspecialization. König, in other words, was searching for a concept similar to Voegelin's primary experience of the cosmos. She, however, proceeded on the basis of her understanding of prehistoric materials.

"No doubt," she began, "prehistoric man, who was intelligent, observed the stars and perhaps worshipped them. Since he saw

them all the time, he had no need to represent them. But thanks to them he could orient himself. The result of this spiritual labor became fixed and transmitted to posterity."[2] As early as the Acheulean, which began in the Lower Paleolithic, about 1.8 MYA, and ended around 100 KYA, König said, "material documents" appeared that bore no relation to daily needs. König speculated that they may have been used in rituals. Such an enormous stretch of time is equivalent to Eliade's *in illo tempore*, a kind of mythical era when some kind of "beginning" took place, which Voegelin called the mystery of origins.

From this indefinite, not to say mysterious beginning, she distinguished five stages of civilization. Corresponding to Voegelin's primary experience of the cosmos, König pointed to the "debut" of civilization as expressed in the creation of nonutilitarian "spheroids." Subsequently these most fundamental artifacts were differentiated into a celestial "vault" along with a terrestrial analogue. Both, she said, could be represented by a skull or by "cup-marks," half-spheres extracted from flat rock surfaces. She speculated that representation of the heavenly/earthly "vault" was represented by Neanderthal Mousterian skulls excavated at Monte Circeo in 1939.[3] Her general point, however, was that the earliest representation of the primary experience of the cosmos was initially of a sphere and later, in the Mousterian (160–40 KYA), in "vaults."

A second stage was expressed in the use of straight lines as a means of communication and orientation in the rock-shelters, or *abris*, of the Île-de-France. These lines were usually reinscribed over many years; moreover, the rock-shelters themselves also could serve as observatories such that the night sky appeared to pass with regularity above the aperture through which humans could stargaze. Crossed lines, she said, were both celestial coordinates and representation of terrestrial structures, such as the four winds, the four corners of the world, and so on. That is, they expressed the cosmological order of space.[4]

Third, the order of time was represented by the moon's three phases followed by darkness. This sequence also expressed the temporal cosmic order of death and birth or rebirth and resurrection. Moreover, projecting lunar observations onto animals, chiefly their tusks, horns, and teeth, created "graphic symbolic images" that could be represented on cave walls. Some of these images lasted into literate times, as with Sumerian hymns to the horned "celestial bull."[5]

A fourth stage was indicated when Upper Paleolithic hunters further differentiated Mousterian symbols by decorating pebbles with red dots and lines to represent space and time simultaneously. These ideograms likewise were continued and reproduced into the agricultural era when they were also combined with death-and-resurrection symbolisms. A fifth stage came with the "idea of God," which Voegelin had discussed in terms of the differentiation of an existent and immanent world and a nonexistent and transcendent beyond.

If Voegelin had not already grasped the significance of König's arguments and interpretations, her conclusions would have made matters quite clear to him. A comprehensive narrative of civilizational development, she said, must look at art and religion as well as economics and technology, which provided only partial perspectives. The problem, however, was to think of all these elements as an ensemble, a whole. "Today," she concluded, "there are numerous different civilizations. In the past there were fewer, but they were more widespread." Indeed, "the images of the Upper Paleolithic are found from the Urals to the Atlantic."[6] Not until the Neolithic were European cultures differentiated from this extended Upper Paleolithic culture, which suggested to her a common basis for all subsequent civilizations. In Voegelin's language, König was concerned to analyze very early instances of the compact symbolization of the primary experience of the cosmos.

Voegelin may have entertained some highly traditional notions regarding the sexual division of labor, especially as it applied to academic life, but he did not allow his prejudices to get in the way of his ability to appreciate genuine insights of female scholars. After hearing König's talk, Voegelin "came up to me straight away and said: 'we must work together.'"[7]

After introducing himself, Voegelin began a correspondence with König that continued intermittently for the next sixteen years.[8] Voegelin began by thanking her for sending him a copy of her paper and other materials. "Your essay is of great value to me because it shows that an historical picture can be crystallized out of the various scientific specializations in prehistoric archaeology and ethnology after all—a picture that goes back at least to the beginnings of *Homo sapiens*." This discovery was important for his own work, Voegelin said, "because the prehistoric symbols are the same as those that later emerge in the earliest written texts on political symbolism," namely, the Egyptian texts of the third

millennium BC. By comparing the Egyptian texts with the prehistoric symbolism as presented by König, "it becomes possible to take the decisive step of dividing the common stock of the tradition [that began in remote prehistoric times] from the new symbols specific to an imperial tradition." Voegelin had described the Egyptian and Mesopotamian materials as providing evidence of a cosmological civilization. "This term can still be used, but [by doing so] it is impossible to separate the cosmological element from the imperial one." With König's insights, however, it would be possible to distinguish the two elements.[9]

König replied a few days later, pointing out that the term *Homo sapiens* was a contested concept among paleoscientists and for that reason she tried to avoid using it. Nor did the Upper Paleolithic constitute a "beginning" (*Anfang*). One must start (*beginnen*) with the early artifactual sphere because what exists further in the past was too uncertain to interpret. But even the deliberately formed sphere (*die geschlangende Kugel*) is also certainly not "the" beginning (*Anfang*). Prior to spheres made by human effort, there were probably round pebbles and especially the skull or even a gesture, such as the fist, to represent a sphere, though these matters are more speculative and, she said, need not trouble Voegelin.[10]

The next substantive communication was from Voegelin to König in late September 1970, indicating that he would be in Europe in mid-October and asking to visit her in Saarbrucken.

> Permit me to explain to you the scientific ground for my urgent need to see you again: in my earlier work, *Order and History*, I had taken up the problem of the symbols of order of the ancient Oriental civilizations. In the meantime, I have found out—in part through your help—that these symbols go back into the Neolithic period and perhaps even into the Upper Paleolithic era. In a further piece I am now working on, I would like to add a section on prehistory—one in which I clarify the specific difference between the symbols in their prehistoric form and the form in which they emerge in the imperial civilizations. But to do this, I must know more about the prehistoric symbols and the state of the research than I currently know.

Accordingly, Voegelin would like to visit her and discuss these problems with her for a couple of days.[11] In the event, they met in early November. Meanwhile, Voegelin had begun his efforts to

bring König's work, initially entitled *Frühen Menschen* (*Early Human Beings*), into print, initially with Kohlhammer Press, then with List and eventually with Mann Brothers, who published *Am Anfang der Kultur* in 1973. We discuss this book in later sections of this chapter.

On November 23, 1970, Voegelin wrote König a thank-you note for her hospitality and indicated he had read the manuscript of *Frühen Menschen*, which he compared to Giorgio de Santillana and Hertha von Dechend's *Hamlet's Mill: An Essay on Myth and the Frame of Time*.[12] Both books, he said, "work through precisely the same problem for myth research." Specifically, they were concerned with the transformation of inorganic and biological changes into human time. "So you are not alone—neither in your critique nor your results. Today in the historical sciences generally we face the problem of throwing out evolutionary theory and replacing it with precise investigations, based on the material, into the differentiations of consciousness within history."[13]

Much of their correspondence during the early 1970s concerned the publication of her book and difficulties associated with her being a "private scholar" (*meine* "*Privatheit*," as she put it). Voegelin also suggested several English publishers for translations, but nothing came of it. He also deputed one of his former students, Tilo Schabert, to assist her with some of the material in the first chapter dealing with archeological methods and assumptions. In January 1977, König wrote a letter to Voegelin that included, in an offhand way, an invitation for him and Lissy Voegelin to tour the *abris* located in Fontainebleau forest with her. Voegelin accepted; for the next several months they exchanged information regarding the details of the visit. It was clear that they were both quite excited about the prospect.

Their relationship was both formal and friendly.[14] Voegelin was not simply expressing the sentiments of a courtly Viennese gentleman. He expressed his genuine respect and gratitude to a fellow scientist operating in a not always friendly environment. Moreover, as Schabert said to Meixner, "Frau König was also important to him. He wasn't interested in her for no reason."[15] Likewise, Thomas Hollweck noted that the correspondence, visits, and conversation with König "opened up for him the depth of the unwritten human past that occupied him during a major part of the last decade of his life."[16] In September 1970, he wrote Hans Sedlmayr, a respected art historian and colleague at Munich:

> In my *Order and History* I dealt with the symbols of the ancient Oriental societies in the manner in which they are depicted in the sources. However, this method has proved to be inadequate, since more of these symbols have a prehistory reaching back into the Neolithic, if not into the late [Upper] Paleolithic. The symbols that appear in the ancient Oriental empires are adaptations of older symbols to the new imperial situation. I am now trying to research pre-imperial symbols as far as they can be followed back into prehistory.[17]

Later that year he wrote Manfred Henningsen about König's "amazing collection of photographs" of cave and rock-shelter images and inscriptions: "Once again . . . we see evidence of the presence of the primary experience of the cosmos and its symbolization at least [back] into the Neolithic age, and perhaps even into the Paleolithic."[18] Despite having also acquired an impressive collection of photographs, including several of himself and König exploring the caves and rock-shelters of the Fontainebleau forest when both were in their late seventies, Voegelin did not manage to integrate this new material into his later publications.[19] In the course of his lectures, however, he would occasionally mention the cave images and petroglyphs in a casual way that his audiences found disconcerting, indeed baffling, a response that he both anticipated and clearly enjoyed. One conclusion seems obvious: like Voegelin, König looked for a constancy of equivalent meanings in the experience and symbolization of reality starting with the earliest possible evidence. Let us now consider her argument in detail.

First, who was Marie König? She was born Marie Emile Paula Schwager in Forst (or Lausitz) on the Polish-German border in 1899. She graduated from high school in 1918 in Aachen on the Belgian-German border, took a teacher-training course for two years, followed by two years teaching elementary school in Pomerania (now part of Poland) and Thuringia in central Germany.[20] She married Heinrich König in 1923 and moved to Saarbrucken where Heinrich took over the family plumbing and heating business, Sanicentral, in 1935. After the end of World War II, Sanicentral prospered along with most of West Germany and helped finance Marie's research. In 1972, Sanicentral subsidized the publication of *Am Anfang der Kultur*, which included many photographs, to the tune of 55,000 DM. "It is our gift to science," König wrote Voegelin.[21]

Although in later life she often attended international conferences on paleoscientific themes, she was never a university-based scientist but what the Germans call a "private scholar" (*Privatgelehrtin*). This was why König called her *Privatheit* a difficulty. In the hierarchic world of German science she was considered a second-class or, being a woman, perhaps a third-class citizen.[22] She was also the mother of two boys, and a grandmother who apparently enjoyed doing her work surrounded by children. She often said that she did not set out to write books or pursue scholarship but was compelled to do so because of the absence of any decent interpretive studies on the caves and rock-shelters that she so much enjoyed exploring, discussing, and observing. Indeed, her enthusiasm for prehistory began during World War I when she explored the Inde valley, east of Aachen, in search of stone artifacts.

To understand König's postwar work, however, we must also consider the state of German archaeology in 1945. Like much of German postwar science, particularly in the human sciences, archaeology had to deal with the long-term effects of Nazi enthusiasm for Aryanness and Aryan superiority. The work of Gustav Kossinna, particularly his two-volume *Ursprung und Verbreitung der Germanen* (1926–27), had been particularly influential and very much in step with National Socialism. Many merely nationalist or folkloric archeologists had benefited from Nazi patronage, the ideological purpose of which was to show that the archaic Germans conformed to the Nazi image.[23] One consequence was that, in the postwar milieu, even though very few archaeologists lost their jobs because of denazification policies implemented by the occupying powers, most German archeologists responded by keeping their heads down and getting on with digging, measuring, and recording. In short, they avoided explicit "theorizing," which is to say, they simply passed on existing and dated "theories" from the pre-Nazi period or imported new ones from France.

Specifically, when König began to study the petroglyphs in the rock-shelters of the Fontainebleau forest (Île-de-France) and the images on the cave walls at Lascaux, the standard interpretative strategy was to understand the images by analogy with contemporary "primitive" peoples. Indeed, even today such hunter-gatherer peoples are often said to be "living in the Stone Age." The assumption underlying the use of "ethnographic analogy" by archeologists was that a San or a Navaho existed

today or at the time of European contact in a way analogous to a Cro-Magnon, notwithstanding the intervening 35 KY.[24] König maintained from the beginning of her work that Upper Paleolithic, or, as she sometimes said, "Ice Age," art was unique in that, as "prehistoric," it provided the foundation for all subsequent "historical" art, including contemporary "primitive art." "Paleolithic humans," she said, "found themselves in a state of transition towards the present-day civilized humans and their technology did not remain in a Paleolithic condition as did primitive peoples. This is why we have to attribute to them [the Paleolithic peoples] a mental capacity quite different than primitive peoples."[25] As a simple methodological issue, the problem practically resolves itself. Arguments from analogy maintain that X is like Y in this particular respect. This means that X is not like Y in other specifiable respects, which means only that such arguments need to be used with caution and in the context of suitable qualifications.

The reigning postwar theorists of cave or parietal art, Abbé Henri Breuil in France (whom we discuss in more detail in chapter 5) and Herbert Kühn in Germany, advanced their interpretations on the basis of the assumption of a close and largely unqualified analogy between primitive contemporary art and Upper Paleolithic art. For the commonsensical reasons just given, König did not. Moreover, König also argued that Breuil and Kühn interpreted the images on the basis of unjustified and a priori "theories" of prehistory (*Urgeschichte*) and primordial religion (*Urreligion*), namely, that the images were evidence of magic practice designed to gain control over reality, especially over hunting success and fertility. That is, König was critical of the two leading authorities of her day because they did not attend with sufficient care to the actual and visible imagery on the cave walls before they developed a theory on what the imagery meant, which for them was "art" or, more specifically, "primitive art."

Following Heinz Werner, among others, König rejected the dogma of a progressive evolution of humanity along a single line of development because it resulted in "a caricature of the mental condition of Paleolithic humanity and a false argument regarding its cultural capacities."[26] She agreed with the argument of Henri-Victor Vallois, longtime editor of the *Revue d'Anthropologie* and director of the Musée de l'Homme in Paris, that the history of modern humanity began in the Upper Paleolithic. That is, she proceeded on the assumption that Paleolithic humans were fully

capable of abstract speculative thought, a position that is sometimes explicitly stated today by cognitive and postprocessual archeologists.[27] In this sense, König was ahead of her time, which was cold comfort because, as everyone else, she lived in a scientific present that largely rejected her work. By assuming that Upper Paleolithic humans were open to the same range of reality as her contemporaries, König was caricatured in 1952 by Guy Gaudron, secretary of the French Prehistorical Society, as attributing "to prehistoric man the mentality of state-qualified philosophy teachers."[28] She was thus dismissed as a "lay-person" carried away with a private enthusiasm.[29]

Prejudice of the German mandarins aside, the genuine hermeneutic problem was that no one in the world of scientific archaeology understood how cave images expressed such thought. Her call for a new approach to the ways of thinking (*Denkformen*) and spiritual development (*geistigen Entwicklungen*) of early humanity fell on deaf ears. Meixner observed, "Precisely the stylization and abstractions in the Ice Age human's pictorial world gave her cause to suspect that spiritual capacities [*geistigen Fähigkeiten*] lay behind these creations."[30] Accordingly, König's first book, *Das Weltbild des Eiszeitlichen Menschen* (*The Image of the World of Ice Age Humanity*),[31] completed in 1953, examined the major cave images of Franco-Cantabria in light of a "universal" spiritual experience, common to human beings as human beings. Specifically, she first outlined her argument that the animal images were symbols that expressed the rhythms of lunar growth and decline rather than hunting or fertility magic and that the "signs" on the cave walls were also significant. She used several of the same examples that appeared in her later books, made comparisons between the cave imagery and the actual shape of a European bison, aurochsen, or mammoth in order to argue that the "exaggerations indicated first, that the animals were symbolic and second, that what was symbolized were phases of the moon."[32] She drew attention to the 3x3 red lines in front of the dappled bull at Lascaux and offered an interpretation, later expanded in detail, of the enigmatic figures in the "pit" or "shaft" at Lascaux[33] (see image 1 in the gallery following this chapter). This was followed by a brief analysis of "mobilary" statues, usually interpreted as females or "Venuses," and of the latter Bronze Age statues of chariots, ceremonial pots, and so on. All these artifacts in one way or another were understood as visual expressions of the experience of human orientation in the cosmos

of time and space. A commonsensical practitioner of what Thomas Kuhn called normal (archaeological) science might concede that the argument elaborated in *The Image of the World of Ice Age Humanity* could constitute a hypothesis. But such a scientist would have plenty of follow-up questions regarding evidence and proof. The problem was, of course, that Upper Paleolithic art was nontextual. Where were the clues by which the imagery might be plausibly interpreted?

König addressed this fundamental methodological and hermeneutic issue in her larger and more interesting 1967 book, *Am Anfang der Kultur*.[34] During the intervening two decades, König attended conferences of paleoscientists, presented her interpretations, and refined her approach to the materials. For the commonsensical (to normal science) reasons just indicated, her arguments by and large were ignored or given the briefest possible mention. At the third Valcamonica Symposium, for example, Arturo Schwartz referred to König's contribution at a previous Valcamonica meeting that took place in 1970.[35] In 1970, König in fact made a significant intervention. Antonio Beltrán, a distinguished Spanish archaeologist, delivered a lengthy paper toward the end of which he asked if anyone had anything to say about a previous paper on the Fontainebleau rock-shelters (*abris*) by Gilles Tassé.[36] Emmanuel Anati, who organized the Valcamonica Symposia (and whom we discuss in chapter 3), declared it was impossible to know what the figures and incisions meant. König replied: "The signs reflect the same cosmological conceptions as are found in megalithic art."[37] That was it. No further discussion. She later delivered a paper summarizing the argument subsequently developed in *Am Anfang der Kultur* that Upper Paleolithic symbolism existed in continuity with later myths. Her paper was part of a catch-all section on "General Problems." The discussion of these problems was devoted chiefly to Alexander Marshack's microscopic analysis, which we discuss in chapter 3.[38]

Meixner argued that König's work on lunar symbolism was ignored because it was too "speculative," which from the perspective shared by normal, twentieth-century archaeological science it surely was. The way König saw her problem, as she remarked in the 1950s, was that the archaeologists and prehistorians rejected her work, "because I expected philosophical ways of thought from them, though certainly not of prehistorical peoples." In fact, her early arguments seemed to rely

more on her artistic sensibility (she was also an accomplished watercolorist) and the methods of art history. As she said in 1963 of her own work, "I don't dig and date; I interpret [*deute*]."[39] König's problem, apart from her lack of professional credentials, was that she did not have either the philosophical vocabulary or sufficient command of the empirical materials to defend her interpretations. As a consequence, to the conventional archaeologists, her interpretations appeared arbitrary, her narrative unpersuasive. On the other hand, it is also true that paleoscientists had little training in art history, let alone philosophy. And as for those pursuing philosophical ways of thought, such as Karl Jaspers, to whom she referred in *Am Anfang der Kultur*, and the philosophical anthropologists, they "are perhaps unwilling to be forced to climb into caves with me."[40] Then in the fall of 1968 she met Voegelin, who was both familiar with philosophical ways of thinking and eager to explore the caves and rock-shelters with her.

In addition to the encouragement and assistance Voegelin provided, his philosophy of history and philosophy of consciousness provided König with an anthropological argument that she was very much aware of not having been able to provide herself. As Meixner said, "Voegelin supported her unselfishly. Through him she, who had been attacked from all sides and who had experienced much hypocrisy [*Duckmäusertum*] and pusillanimity [*Feigheit*], came to enjoy what Voegelin called the ethic of scientists."[41]

To Voegelin's philosophical insights König brought her own interpretive skills, which she had developed from her long study of Celtic numismatics. It was an error, she said, to judge Celtic coins by classical Greek and Roman standards of beauty: "Aesthetic considerations are essentially contingent; they are one thing, and symbolism is another. And the two categories are entirely distinct."[42] The gods and the myths represented on classic Mediterranean coins "are entirely foreign to the spirit of the Celts" (see image 2).[43] The signs and imagery of Celtic coins, she said, reproduced many of the pictograms to be found in the Upper Paleolithic caves and rock-shelters of the Île-de-France, which indicated the Celts were part of a spiritual tradition existing without interruption from the much earlier period: "This decorative parallelism is absolutely striking."[44] Again König was explicit in her assumption that accounted for the decorative parallelism. "Every stage in man's development," she wrote,

"takes over the intellectual property of his forebears so long as the tradition remains unbroken. New and more precise concepts are formed beside the earlier ones and require their own particular expression."[45] As Meixner put it, König saw not artistic incompetence in the "crude" Celtic symbolism on their coins, but "a conscious act of abstraction derived from the store of primordial concepts upon which the Celtic coin-makers drew."[46] However, even here, the same interpretive problem arose: How to justify her premise of continuity and of its elaboration by way of later and more precise imagery? This was also a problem for normal archaeological science.[47] Just as contingent aesthetics and symbolic continuity remained a constant interpretive problem, so was the hermeneutic circle of interpreting earlier Paleolithic material in light of Celtic numismatics and Celtic symbols in light of earlier "primordial" symbolism a constant and never-solved problem. Yet, one must make assumptions of some kind in order to say anything at all. At the same time, however, assumptions necessarily reduce the persuasiveness of the narrative interpretation offered. König was aware of the problem, but she was reluctant to qualify her assertions in the direction of reduced certainty. Her rhetorical approach probably also offended her professional colleagues. She did, however, find support for her assumption of continuity and elaboration of experiences and symbolization in a philosophical anthropology associated with, among others, Adolf Portmann and Arnold Gehlen, and in Karl Jaspers's early book *Psychologie der Weltanschauungen* (1919).[48] Jaspers was also important for König because he considered the insights of prehistorians important for his own philosophy of history. Her efforts to engage Jaspers in an epistolary conversation, however, were a failure.

Given her argument that Celtic coins needed to be understood not in terms of classical aesthetics but as conveyors of meaningful and very early symbols, it was no surprise that she found equally unsatisfactory the still prevalent opinion that the cave images were important because contemporary observers found them to be beautiful.[49] For one thing, at the same time as nineteenth-, twentieth-, and twenty-first-century cave explorers were praising the beauty of the imagery and representations, they pretty much ignored the geometric figures, signs, and other imagery also present in the caves. Moreover, by looking at them as "art" rather than as religious images or "documents," they were taken out of context so that whatever meaning they expressed was further

obscured.[50] Just as a painting of a dove ceased to symbolize the Holy Spirit outside the context supplied by a Christian church and represented a mere bird, so the "paintings" in caves lost their significance when viewed outside their context. "When," she said, "it is a matter of concepts that one cannot see but that can be believed in, it is necessary then to use material things to give them expression." Thus a cathedral symbolized all the truths of salvation in material form. And by analogy the same was true, she said, for the animal images. "What is presented to us as an animal can have an entirely different significance. The very context, the cave sanctuary, clearly shows us that we are dealing with representations that are part of a cult."[51]

In other words, when cave images were turned into "works of art" rather than considered as documents or religious artifacts, they were understood simply in a positivist context. Hence, for example, if traces of food were also found at the site where pictures of bison existed, this meant that bison were eaten—a fact that was well known on the basis of other evidence in any event. The notion of bison-as-food then led to the conclusion, for which there was no other evidence, that the imagery represented game sought by hunters. Any search for a symbolic significance, especially a religious one, was dismissed as "unscientific." As she said (to no avail) at the 1972 Valcamonica Symposium: "Every tradition has a spiritual core, which is the source and determinant of all the details. This is crucial to the study of religion, for religion reflects ideas and we must study its development in the documents, which record changes. We must not tear details out of their context, but relate them to the essence and to the various stages of its development. This 'core' approach may be useful for the study of prehistoric religions."[52] Her point was not that bison were not food. Obviously, one has to eat. Rather, eating is not just a biological necessity but, because bison sustain life, bison are also saturated with spiritual significance insofar as life has spiritual significance. The polyvalent or polysemic meaning of bison as food and as spiritual food is simply an attribute of any compact symbolism.[53]

However, König explicitly rejected ethnographic reports of contemporary "primitives" in exotic places as being analogous to Upper Paleolithic peoples insofar as they were all said to be "prelogical." The corollary that because primitives and Upper Paleolithic persons were outwardly similar they must also be inwardly similar was also without evidence or foundation. There

was no reason to believe, therefore, that the caves contained "totemic" animals akin to the "Dema deities" of New Guinea or of anything analogous. Nor was she persuaded by the arguments of anthropologists familiar with Siberian and Inuit cultures that found shamanic cults and "shadow souls" in the animals depicted on the cave walls. All such "theories," along with arguments regarding hunting and fertility magic, assumed that the painters were too unimaginative or just too brutish and stupid to do more than reproduce what they wanted, chiefly, food and reproductive success.

As indicated indirectly in *Das Weltbild der Eiszeitlichen Menschen*, König proposed an entirely different premise: "Whatever we find in our excavations is always the outer consequence and never the inner cause. Since the causes are spiritual processes, leading to visible results, large areas of science based in reality are off limits to [positivist] historical research."[54] But precisely the "spiritual processes" were of interest to her. Better, therefore, to follow the hints and arguments of philosophers—and here she mentioned Herder, Dilthey, and Bergson—and also anthropologists who stressed the continuity of modern and early historical human beings.

In other words, for König, the distinguished contemporary paleoscientists had things backwards: religion was not confined to fertility rites.[55] Rather, fertility rites were part of a religious or cultic practice the overriding meaning of which was to express a "primordial image of the world."[56] Such an approach, to König, introduced an obvious new question: What *was* that primordial image? And how did it remain meaningful over long periods of time and yet find ever-new expressions? Some scholars grappled with this problem (and here she mentioned Bachofen, Jung, Jaspers, and Schwabe) by emphasizing the importance of looking at the Upper Paleolithic materials not just as instruments but as symbols or expressions of a "primordial oneness" from which later cultural forms were developed or differentiated.

Central to her argument here was the work of Eberhard Dennert and Arnold Gehlen. Both stressed König's initial premise, namely, the human action that produced, for example, stone tools, was determined by thinking: "Every tool may be understood as documenting a train of thought." Even "mute" tools provide a glimpse of an intellectual or "spiritual" process (*geistigen Vorgänge*).[57] Accordingly, one must formulate accounts of early human experience based on authentic Upper Paleolithic

material evidence that is more than positivistic "facts" insofar as it takes into account the world of the spirits (*die Welt des Geistes*), the supernatural, and the realm of belief that gives meaning to those facts. "If we choose the right path, it must lead to the categories of thought [*Denkkategorien*] of high culture, the rich spiritual life of which is familiar to us in writing and other documents."[58] All that was needed was a disciplined imagination.

Specifically, König would examine stone tools as "documents in stone," or "concepts in stone," as Gehlen called them.[59] In this approach, König anticipated the now standard archaeological concept first introduced by Leroi-Gourhan, the *chaîne opératoire*, or "operational sequence" by which archaeologists analyze the sequence of acts that produce an artifact, such as a blade or an ax.[60] The assumption, again borrowed from Dennert and Gehlen, was that just as stone tools developed from basic and universal implements to complex and specialized ones, so too did early imagery develop from basic and universal symbols to complex and specific ones. That is, both tools and imagery followed similar trajectories of change within a common continuity because they were both expressions of the same "ordering spirit." The "general idea" expressed in a simple implement "is differentiated and a stage of development is created called [by her] '*Prägnanzstufe*' [potential to develop]."[61]

König now thought that she had an important key to understanding the petroglyphs of the Île-de-France, most of which she had examined over many years in the Fontainebleau forest, often in the company of her family.[62] Physically, the petroglyphs were mostly engraved scratches, sometimes crosshatches, on the walls of caves and rock-shelters. Compared to the imagery of the caves of Franco-Cantabria, they were abstract and to modern sensibilities not particularly beautiful. For König, however, they were analogous to the development from the generalized Oldowan choppers to the biface hand axes of the Acheulean, to the knives and scrapers of the Mousterian, and to the blades of the Aurignacian and Magdalenian.[63] If the parallel held, the petroglyphs and rock-shelters of the Fontainebleau forest would express the most basic and universal experiences of human orientation in the cosmos. König expected also that they would be chronologically older than the decorated caves. Dating the Fontainebleau rock-shelters and comparing them to the decorated caves farther south proved to be a difficult if not intractable problem that so far as I know has not been resolved.[64]

In Voegelin's language, as we discussed in chapter 1, König was concerned with the most compact and elementary human consciousness that, she argued, was expressed in the earliest stone choppers. König relied on Werner's comparative psychology to develop her own commonsensical rather than philosophical version of the distinction between compactness and differentiation. Once the notion of a stupid and brutish primitive human being had been abandoned along with the outmoded theory of progressive development that supported it, it was necessary to consider the best way of understanding the spiritual world of early humans. This approach must be based on "documents," namely, those materials that were available in the tools and images created by early human beings. Tools required humans to collect suitable stones and to develop an appropriate "operational sequence" that could be passed on to succeeding generations. New inventions were always possible and were often made, but not as a random or idiosyncratic accumulation so much as a sequence of types beginning, as noted above, with the all-purpose Oldowan choppers.

The first human act that created a chopper from a stone (and for which there is no identifiable artifact) was entirely creative; it was an initiative. Once patterned, it could be reproduced and inspire additional inventions. König envisaged this development in terms of a pyramid.[65] At the top was a basic principle—the tool, for example. Then, over the generations, cultures modified inherited traditions by adding new specializations without repudiating or destroying the basic concept. A tool such as a chopper could become a knife or an ax or a scraper without ceasing to be a tool: "The basic concept remains central and is essential to an understanding of the development of particulars, especially when we are dealing not with tools but with symbols, the significance of which is not always obvious."[66]

The assumptions, again, were these: (1) "Every cultural object concretized a thought. The idea is primary. It determines the executions"; (2) there was an analogy between "spiritual genesis" as expressed in the notion of a conceptual pyramid, and "cultural development," which was attested by the improvement of tools; thus (3) the pyramid representing the excavated artifacts also represented "conceptual development." Accordingly, the analogy with the development of tools could be found in the spiritual development of humanity: in the beginning was a relatively undifferentiated experience and symbolization of the whole.[67]

König's discussions of "fundamental experience" or "spiritual core," which were equivalent to Voegelin's "primary experience of the cosmos," continued her narrative account of the spiritual implications of "man the tool-maker" and thus of the genesis of *Homo spiritualis*, and also of what occasionally amounted to her own speculative philosophical anthropology.[68] For example, the experiences of hunger and cold quickly inform anyone of the biophysical basis of existence. Hunting and control of fire answer that experience with food and warmth—and it is perhaps worth stressing that for large stretches of early human history, the inhabitants of, say, southern Africa or eastern Africa, were refugees from extensive glaciation and desertification. In such refugia as existed, food and warmth would be high priorities. But the eyes of early humanity exceeded the ability to act directly within the world around them (*Umwelt*): the stars and the sky brought human beings new experiences, but, being disconnected from immediate concerns for food and warmth, they were experiences of a different kind, and these too needed to be reflected on and imaginatively, not pragmatically, accounted for.

At the same time as hunger was sated and early human beings achieved what Hegel once called "sentiment-of-self," a glance at heaven, as Aristotle said, initiated a new experience for which nothing was to be done except think about it. No tool, no material embodiment of such thought was possible, though images, of bears, for example, could be created or found in the sky. This different mode of cognition required an act of the imagination, which König called "faith" and Voegelin called "imaginative participation." And at the same time, this mode of cognition was directed at the mystery of birth, life, and death, all three self-evidently connected to, or part of, the material issues of eating and keeping warm, but were not exhausted by them. That is, if you don't eat or keep warm, you die. But even if you do eat and keep warm, you still die. Thus the first mode of consciousness, Hegel's *Selbstgefühl*, could not explain the second, Aristotle's wonder. Nor could wonder be reduced to sentiment-of-self. The experience of wonder was autonomous even while it was dependent on a body that needed to be fed and kept warm. Or, within the context of compact cosmological consciousness, there was a spiritual and also a biological significance to being warm

and well-fed. In addition to the stars and the sky and their rhythms, there were other forces that could not be seen but nevertheless were there—the wind and the seasons, for example—and still others such as volcanoes that, even though they may be visible, could not be dealt with as hunting dealt with hunger and keeping warm dealt with cold: they could be observed but not measured, anticipated, or mitigated. Humans nevertheless could wonder what they meant.

To put it another way, part of the primordial image of the world according to König was that it was dangerous and that human existence within it was precarious. Humans were at the mercy of unseen or uncontrollable forces or events and so they felt dependent, but they could reflect on their dependency and so feel connected to the world, understand themselves as participants in it, and be grateful for their connection and participation. Existence may be precarious, but it was not chaotic or utterly unintelligible; there was order and disorder, but human existence nevertheless unfolded within a cosmion, a little world of meaning. This complex of experiences required special behavior—a cult, as König said, and a ritual space that could make these invisible realities visible, present, and so accessible to imaginative human participation. The primordial forces, more fundamental even than the material necessities of food and warmth, were accordingly symbolized not to *control* them, as at the time contemporary prehistorians almost universally assumed, so much as to connect early humans with an invisible and more fundamental reality. In Voegelin's language, participation in reality, some elements of which were invisible and nonexistent, and not the control of existent phenomena, was the motivation for this symbolization of the primary experience of the cosmos.

"The oldest objects to have been found that were not tools and that therefore raised the question of their cultic purpose," König wrote, "were spheroids."[69] The oldest of these, she said, dated from the end of the Lower Paleolithic, the Acheulean, about 300 KYA. If this dating is accurate, they belonged to the very earliest possible time, according to the fossil record, of human habitation, shortly after the "separation" of *Homo erectus* and *Homo sapiens*.[70] In any event, these spheroids were three or four inches in diameter and so could be held in the palm of the hand. That they were spheroids was of great significance to König. The spheroid, she said, "was the ideal shape [*Gestalt*] for the as yet undifferentiated fundamental concept [*Grundbegriff*]

because alone it is the perfectly uniform figure [*Figur*]."[71] In addition, the visible or phenomenal cosmos, especially as made evident in the nocturnal motion of the planets and stars, made the sky look like a vault. So, König argued, the cosmos could be represented in this primordial way either from the outside, as a sphere, or from the inside, as a vault with the observer at the center.[72] The skull, being both spheroid and hollow, was highly suitable as a representation of both perspectives. This may be why so many skulls and skull fragments have been preserved. In any event, for one reason or another, skulls have long been treated in a special way.

The undifferentiated cosmos/sphere/vault was, she argued, the primordial and unstructured representation from which developed a more differentiated structure of an above and a below, or netherworld, often understood to be lying in water—a spring, for example, emerging from the depths, could also be an entrance to the netherworld. Occasionally skulls have been preserved in what once were springs, which was an indication of ritual treatment. Such rituals also indicated that the cosmos was not simply an assumed unity (*Einheit gedacht*). Now there was an above and a below, a here-and-now and a beyond. Thus was the cosmos more precisely understood, which also meant it could no longer be adequately represented as a spheroid. "Perhaps the hunter found a suitable comparison by looking at a shell," the two halves of which expressed this newly discovered principle.[73] Whatever shells came to symbolize, they took on a significance that was unrelated to use as food or as a tool. That their meaning was nevertheless significant is attested by the survival of so many shells in locations far from their natural home.

Later Mousterian (ca. 50–40 KYA) cultural practices continued the use of spheroids and shells. Skulls were often separated from other bones and preserved separately, and ritual activity near springs continued. Moreover, if springs dried up or subterranean channels changed course, as happened in many places in France, the result was another liminal space, the cave.[74] A significant innovation that was based on a "bivalve" distinction of above and below was the practice of burying human remains, including those of Neanderthals, along an east–west axis and often in rectangular graves and placed in a fetal position, as though awaiting rebirth.[75] Such practices presuppose close observation of the heavens and especially of the sun, which rose on one side of the sky and set on the other. Observation and representation of

the two sides of the sky, the "world axis," gave additional structure to the cosmos. This axis, however, could not be represented by a sphere or a vault, but only by a straight line. Nor could it be derived from a sphere or vault. Even more remarkable, a north–south axis, which also appeared in the Mousterian period, could not be derived from observation of the rising and setting of the stars but was, so to speak, an act of pure speculation. By the Middle Paleolithic, therefore, humans used their imagination to develop a cosmic focal point where the two axes intersected. At the same time, humans created the four cardinal directions. This articulation of the cosmos may have been known to Neanderthals on the grounds that they also laid their dead in square burial pits. For the first time the cosmos had a center or focal point: the intersection of the two world axes. The subsequent elaboration of the four cardinal points was, König said, the result of "conceptual thinking" (*begrifflichen Denken*) and thereby further separated nature from the human world and contributed to the "spiritual genesis" of human being.[76] Of particular significance in this context, König argued, were the "cult-caves" of the Île-de-France, which remained in use from the Mousterian until the Christian centuries.

König's discussion of the caves and rock-shelters of the Île-de-France introduced another element to her narrative: the natural geological formation of the landscape.[77] The ground where a visitor can walk today in the Fontainebleau forest is composed of very different kinds of material, from loose sand to hard quartzite. Much of the terrain is covered today with trees and other vegetation, but there are many outcrops of rock that have been eroded by wind, rain, and groundwater. The result is, König said, a "bizarre landscape." This is certainly true. There are large rounded rocks that look like mammoths, others covered with a polygonal surface structure look like shells of turtles, and still others look like skulls, balls, and faces. There are flat bowls that humans can lie down in, some with holes opening to a limited section of sky that at night might allow for the focused observation of celestial motions. There are also large caves, often accessible only by way of sinkholes, some of which are surrounded by standing stones.[78] Even today there is something slightly eerie about these rock formations.[79]

What strikes the observer immediately, however, is the proliferation of lines and circles, crosshatches and nets inscribed on the interior walls and ceilings of the rock-shelters and caves.

These “documents,” König said, have a common style even though some scratches are longer and deeper than others, which suggests frequent repetition or ritual use of the original inscription. Baudet was able to date the tools that made the different kinds of scratches from the Middle to the Upper Paleolithic.[80] If the earliest dates were accurate, some of the signs and ideograms dated from Neanderthal times.[81]

König then invoked her general methodological assumption regarding increased specificity and differentiation, which indicated that the later scratches were more complex than the earlier ones, “and we can draw conclusions about their meaning. In the caves of the Île-de-France are reflected the genesis of the symbols that, in later cultural provinces, are familiar to us as completed schemes in their final form [*Gestalt*].”[82] That is, the early symbols were preserved in later textual documents, for which discursive explanations were available so that we could “read back” meanings into the ambiguous earlier documents from our understanding of the more explicit later ones. As she put it in an earlier version of her argument, because the Upper Paleolithic people did not possess a written language to aid us in the decipherment of the meaning of their ideograms and imagery, “only characteristics of style can reveal to us their spiritual content. Thanks to recent finds from historical eras, we now possess material whose style corresponds to the prehistoric as regards the representation of both women and animals. This stylistic correspondence indicated a continuous ideological tradition.”[83] She then made reference to the winged bulls of Assyria as lunar symbols, as did the Celts, who, according to Strabo, worshipped the moon. To state the obvious: discussions of style involved sensitivity, expertise, and connoisseurship, none of which skills is universally available.

König’s use of historical evidence to interpret prehistorical symbols added to the weight of her argument (discussed above) that postulated an analogical development from all-purpose choppers to specialized cutting tools with the change from compact and simple symbolizations of the cosmos to more complex and differentiated ones. In the context of early human history, she argued that the scratches on the cave and rock-shelter ceilings and walls of the Île-de-France were ideograms that could also be found in the decorated caves of the Upper Paleolithic. Moreover, since there was at least one image of a spotted horse that unquestionably belonged to the “style” of the

Upper Paleolithic caves, it was evident that, in the Île-de-France, sites were in use for an extended and continuous period of time. Lastly, König concluded that the scratches—of lines and crosses, spheres, cups, and circles—indicate that such symbols, at least in the Île-de-France, occurred in the same cultic space and thus presupposed a shared worldview and spiritual experience. The newer forms (*Gestalten*) were simply added to the old without demolishing anything. The destruction and mutilation of these symbols, as distinct from adding to them or incorporating later forms into earlier ones, did not occur until Christian times.

Space

The subtitle to König's *Am Anfang der Kultur—The Sign Language of Early Man*—indicated her major thesis: the lines, pictographs, ideograms, and images of the caves and rock-shelters were religious or speculative documents that could be decoded following Voegelin's logic of compactness and differentiation of experiences and symbols.[84] The remaining chapters of her book dealt with the orders of space and of time, with the lunar sequences as a symbolism of birth and death, with the symbolism of numeric notation, and with a brief account of the later development of Upper Paleolithic symbolism in the petroglyphs of Valcamonica, Italy. She began by reiterating her primary presupposition, that the initial symbolization of the cosmos was a sphere. This was followed by a distinction between the upper and the lower worlds, symbolized by "cups," hollows, or bowls that, as a clamshell, might come together to reconstitute the whole.[85] In addition, looking to the vault of the sky or the upper world, one could imagine lines traced by the movement of the celestial bodies. The most pristine beginning of this process of cultural and symbolic differentiation, which is to say, the initial representation of meaning, she argued, was expressed in the scratches of the cave and rock-shelter walls. Such a beginning was not, however, "the" beginning. As she wrote to Voegelin, there is no beginning (*Anfang*) that can be specified.[86]

There are plenty of natural caves available, but only some were chosen for cult activities. There must have been a good reason for these choices. To begin to discover it, we must be alert to both the natural forms of particular caves and the evidence of human activity. Moreover, we must also be aware of the problem of compactness and symbolic polyvalence so that a multitude of

forms, made up solely of straight lines and “cups,” could be used to symbolize the same experience or express the same meaning. In addition, the cult-caves could sometimes combine natural formations with man-made ones, which meant that on occasion nature shaped the expression of the human spiritual world and humans simply recognized what was already there. Hence the importance of landscape, and of what Marcel Otte later called “a dialogue between rock and thought.”[87]

The lines traced by celestial bodies introduced a new ordering principle. To the extent that the cosmos was now understood as a symmetrical “above” and “below,” lines may be expected to appear in both the cup half and in the vault half. Occasionally cups were sculpted into the floor of a rock-shelter in such a way as to give them prominent rims; in Neolithic times, these “holy bowls” became quite large. There are also sculpted heads, symbolizing the older cosmic sphere, covered with ideograms and lines forming a grid, lattice, or “net” that represented, König suggested, “a kind of system of coordinates covering the world,” and constituted (perhaps) a precursor to the houses of the zodiac.[88]

That is, the original cruciform image, which may be enclosed in a circle (as with the Tata plaque),[89] was made more precise with additional vertical and horizontal lines, thereby creating the ideogram of a net familiar from such famous later artifacts as the Willendorf[90] or Brassempouy (see image 3) statues. “There is hardly any other idea as deeply rooted in human consciousness” than the symbolism of right-angled lines, whether expressed as a rectangle, a grid, or a net. Moreover, despite occasional appearances of right angles in nature (as in a tortoise shell or the tortoise-shell-like rocks of the Fontainebleau forest), by and large right angles required human intervention. This very old ordering principle, we saw, began with the square burial pits of the Neanderthals and continued into the much later constructions of square or rectangular temples, palaces, and even cities laid out on a grid corresponding to the cardinal points.[91] Granted that the early grids were reflections of the lines traced in the celestial sphere, it was also true that the stars and planets did not just move in straight lines: “They rose to a zenith [*Kulminationspunkt*] and then fell again thus tracing a curve across the sky.”[92] This rhythm, she said, may have been understood as a general law inasmuch as it corresponded to the natural growth and decay of plants and animals as well as to the course of human existence.

Her next topic of discussion therefore dealt with the symbolization of cycles (*der Umlaufgedanke*). Just as there was a stellar course from birth in the east to death in the west, death was followed by rebirth of the celestial bodies in the east. In order to return from west to east the celestial bodies had to pass through the subterranean mirror image of the celestial vault, the underworld. This rhythmic change might easily be symbolized by a ring or by a "ring-cross," which combined a circle (symbolizing the return of the stars to the east via the underworld) and a cross inside it (symbolizing the fourfold structure of the cosmos). König also argued that using only straight lines one might equally symbolize the cycle of life and death. Here she first made reference to a later symbolization on Celtic coins that connected the four cardinal points to a curved line representing the course of the stars, sometimes with short side lines to make a curve "herringbone," the rising side of which points up to life and the falling side down to death, akin to the imperial Roman gesture pronouncing on defeated gladiators.[93] She then "read back" into the symbolism of the rock-shelters, which did not contain a curved line or arc, an equivalent meaning. Here the straight-line "herringbone" and "antler" ideograms were interpreted as also symbolizing the cycle of life and death and thus adding a further complexity to the structure of the cosmos.

Just as the "ring-cross" became an element in the "spiritual property" of humanity, so did the "line-cross" (a graphic but also generalized expression of human orientation in the cosmos) become the center of human spiritual existence and the fixed point at the center of the cultural world. The discovery of this central point led to the understanding of the four cardinal points and the four directions that converged on it. Then, once discovered, the four cardinal points were understood as the corners of the world and so the cultural world was conceived as a rectangle or square. The four "corners of the world" could be expressed in straight lines and thereby provide a more organized and limited image of the cosmos than was conveyed by the spheroids. Interestingly enough, the "net" as the sign of an ordered cosmos could be conceived as covering both the sphere and the rectangle.

Equally important to the quadrangle enclosing, and so ordering, space was "the number four," which could be expressed as four scratched lines, four dots (or cup-marks), four painted lines, and so on. In addition, however, this quadrangle "world-

plan," when surrounding a cross, introduced a fifth cardinal point that could initially take the form of a vertical/horizontal cross, the cross of St. George, or of a diagonal cross, the cross of St. Andrew. The vertical/horizontal cross divided the quadrangle cosmos into four squares; the diagonal cross into four triangles. And the two could be combined, as in the England-Scotland Union flag (1606 to 1801). With the addition of a third intersecting line, with or without a surrounding rectangle or circle, there appeared the third axis to the cosmos extending from the zenith to the nadir, the two poles connected by a line passing through the center. That is, once the center of the cosmos was symbolized as the intersection of the two lines, a third intersection, of the sky and the underworld, could also be discovered.

König's point, as the thoroughly modern example of the British Union flag (1606–1801) illustrated, was that, although the imaginative range of ideograms may be limited, as befits a compact symbolism, the "sign language" conveyed an essential meaning that was transferred across generations. Indeed, she said, "ideograms hold the key to the understanding of pictorial symbolism" such as may be found in the painted caves.[94] Given that the basic purpose of all the ideograms was to present, express, or symbolize the whole cosmos (*das All*), the two-dimensional scratches supplement the spherical forms of nature.[95] They give cosmic space more precision, more structure, and more order, "but the conception [*Vorstellung*] of the world as spheroid remained rooted in human consciousness."[96] Even so, something fundamental had changed when the cosmos was symbolized with "corners." The three-dimensional representation was a cube, not a sphere. Accordingly, one finds, for example, pebbles from Le Mas-d'Azil that, like a die, contain dots on the face to represent the five cardinal points.[97] The development of a world image as a cube in the Upper Paleolithic depended, however, on the prior image of the cosmos as sphere.

Time

After discussing how Upper Paleolithic humans oriented themselves in space, König turned to the problem of orientation in time, starting, naturally, with the succession of day and night and the passage of the sun across the sky from east to west followed by the return to the east via the netherworld. Then came

the experience of the phases of the moon and how those changes were integrated with solar motion. In this context she mentioned the work of Alexander Marshack, which we will discuss in chapter 3.

König began her interpretation not by considering evidence for the sequence of the phases of the moon, as did Marshack, but by postulating the basic principle of "the three." That is, she began with an interpretive principle of equivalence: three dots expressed an equivalent meaning to three lines. The representational form might vary, but the significance could remain the same. The reason why this assumption appeared reasonable to her was that the moon appeared in three phases to all human beings everywhere. Accordingly, "the three" could not disappear from human consciousness, even though the way it was represented or symbolized might vary enormously.

König found confirmation for the interpretation in the image of the large white/dappled bull in the Hall of the Bulls at Lascaux (see image 1): in front of his snout are three groups of three red lines. A hunter of aurochsen might easily identify the horns of the bull with the "horned moon" (Shakespeare, *A Midsummer Night's Dream*, 5.1.125). The hoof print of a boar or the tusks of a mammoth would likewise remind a hunter of the phases of the moon. That many of these images were painted in what Breuil called a "twisted perspective" only served to emphasize the lunar imagery of the horns.[98] If it were accepted that the horns and tusks of beasts, often exaggerated, were intended to express the order of time as it is manifest in lunar changes, then the importance of the symbolism of "the three" would be emphasized. Bulls, lines, or dots all expressed an equivalent symbolic meaning. To which may be added triangles, including "double triangles" with tips touching at the center and even a double-headed ax with a handle to represent the cosmic spatial axis. The bull, often with a triangle on its forehead, survived as a cultic representation almost to Christian times. Again, König's point was not that double triangles could be found in rock-shelters of the Île-de-France, which was simply a fact. Rather, it was that the symbolism first encountered in the Upper Paleolithic was transmitted well into literate historical times, in Crete, for example, even when later human beings forgot its origins as lunar symbolism.

Armed with the insight that the principle of the ordering value of "the three" could be expressed in many different ways,

König found several variations besides triangles and parallel lines. Three lines could be placed around a common center to make a T, sometimes with cup-marks at the ends of the extremities thus constituting a triangle. Or it could appear on Neolithic statues by way of eyebrows and the bridge of the nose, or, of course, the female pelvic triangle. Similarly, the chin of the ivory head of the Brassempouy statue (image 3) is triangular beneath a net-covered head. By König's interpretation, then, the famous Upper Paleolithic "Venuses" were more cosmological- than fertility-related. Perhaps it would be more accurate to say that the fertility aspect of the Venuses was one constituent of the cosmological, which in turn included both decline/death and regeneration/life, especially in lunar symbolism. That the Venus figures looked pregnant was therefore discounted.[99] Rather than embodying simply the realism of pregnancy, the large rounded stomachs and deep navel cup-mark were also meant to represent the sphere of the cosmos. This interpretation would explain why, for example, the figures often had no feet. Or rather, where realistic feet would be, one finds only the apex of a triangle. Lunar ideograms sometimes took an almond shape flanked by two sickle moons, one waxing and the other waning. Or there is the well-known bison from the cave wall at La Mouthe (Dordogne)[100] whose outsize horns would represent the beginning and end phases of the lunar cycle and whose outsize single eye in the middle would represent the full moon.

König next devoted an entire chapter to the new moon as an especially important measure of time. Much of her argument reiterated the points already made. In addition, however, she argued that the fourth phase, the "death" of the moon in the three days when it disappeared from the night sky, also promised the hope of resurrection.[101] That is, the common human anxiety regarding death could be both expressed and reduced by ritual integration with cosmic lunar rhythms. As evidence, she pointed to three lines with a fourth drawn through them or to cosmic-symbolic bulls accompanied by three lines and an arrow. Likewise, an ax, a triangle with a shaft touching one corner, would be a symbol and a (rather ineffective) tool. Its proximity in Upper Paleolithic caves to what are conventionally described as vulvae expressed the intimate connection of death and life. Accordingly, death and life, including new life, were thus constituent elements of the order to the cosmos for Upper Paleolithic humans.

König offered an interpretation of the well-known figure in the "pit" or "shaft" at Lascaux that is consistent with her general interpretive argument and more detailed than her previous effort in *Das Weltbild*.[102] Unlike most of the images in the cave, which were oriented around the cave vault, this one was located at its lowest point. To the right was a dying bison, the symbol of the waning moon. New life was expressed in the ithyphallic anthropomorphic image with the bird's head. It had a rectangular body with outstretched hands, each of which has four digits (like Mickey Mouse). The bird's head and the bird nearby (and below) "connect the concept [of the ensemble] to heaven and to resurrection [*Erweckung*]." The anthropomorphic figure, she said, was "marked with all the signs [*Züge*] of cosmic order." [103] The imagery also showed that the moon did not renew itself on its own, that a cosmic power, in the shape of the anthropomorphic figure, was there to attend or even command "rebirth."[104]

König concluded this chapter on the meaning of birth-death-resurrection, as symbolized by the new moon, with a brief methodological reflection. "Each single object indicated an act of thinking [*Denkact*] and we set ourselves the task of recapitulating the execution of the movement of thinking [*Denkbewegung*]," which is to say, the movement of differentiation of experience and symbolization within and of compact consciousness. "To that end we first must find a common denominator for the entire complex of symbols that sustained the fundamental concept." And then, on the basis of the "fundamental concept" for which the symbol complex furnished equivalent meanings, "the documents are marked with increasingly clear meanings."[105]

It was particularly difficult to symbolize time. The moon was a heavenly clock that could be compared with earthly objects—but which ones? And these earthly objects could change from one thing (a pair of bison horns) to another (a triangle, three dots, etc.). So "any number of symbolic images that bore no external relationship to one another" might yet be responses to the same experience. If her interpretation of the new moon as an "answer" to the anxieties of life and death was accepted, and if we examined the Upper Paleolithic "documents" with this perspective in mind, one thing becomes very clear: the earliest cultures sustained a highly specialized spirituality.

Number

The spiritual comprehension of the world began with the development of an image of the world as spheroid. This image was subsequently differentiated first into above and below, then into space and time, all of which nevertheless remained parts of a single whole. But how were the parts related to the whole? Did the parts retain their analytical distinctiveness? To understand such questions, König said, "analysis must be followed by synthesis."[106] However, once the notions of space and time had been differentiated, one could not simply return to the more compact symbolism of the spheroid. Rather, a new synthesizing symbolism that integrated the now differentiated symbolism was called for. This synthesis, moreover, remained within the symbolic form of ideograms to be found in the Upper Paleolithic cave imagery and such later imagery as could be linked by an intelligible narrative to the older symbolism.

We saw in previous sections that the order of space found expression in the four-sided rectangle and the order of time based on lunar phases in "the three." One synthesis, therefore, was the additive seven. That is, "the seven" could express the unity of the spheroid symbolism articulated into its spatio-temporal (4 + 3) components. This ideogram could take the form of seven lines, of a triangle with four cup-marks inside, a grid of three long vertical lines connected in the middle with three horizontal lines creating four squares, and so on. The last described grid of 3x3 lines also expressed the number of nights of each phase of the moon. Such a combination of lines and dots grouped in threes and fours, crosses, grids, squares, and nets were all present in the decorated cave at Lascaux. According to König, the details of the large animal images were to be interpreted in light of the ideograms, the meaning of which had largely been forgotten. Or, as she put it, "with the end of the Ice Age, graphic symbolism [*bildhafte Symbolik*] was abandoned but the signs of [earlier] meaning [*Sinnzeichen*] were still in use."[107]

A second "synthesizing" symbolism König discussed was the spiral. Spirals were developed from circles, but unlike the circle, the spiral does not return to its beginning. Rather, it leads to a center and back out again. At Newgrange, a Neolithic site, they are wound up in opposite directions and placed amid squares and triangles. They point above and below, to the zenith and the nadir, and so also express the mystery of life and death. If you follow the line of the spiral, it turns back on itself and returns to the beginning; if we assume the center of the spiral is the nadir,

following its line is a path to the depth, followed by a return from the kingdom of the underworld to life. Thus, "the spiral expressed the hope of resurrection," a notion still present in Christian representations of the labyrinth.[108]

König next turned to the symbolism of Celtic coins. She was a recognized expert in Celtic numismatics. Here, as in *Das Weltbild*, she used her extensive knowledge of these artifacts to argue that Celtic symbolism "preserved the spiritual heritage of the [remote] past."[109] Such coins were not crude versions of the "realistic" symbolism of the Greeks and Romans, but an expression of more fundamental, earlier, and prehistoric cosmic order. Though they were minted relatively late, many during the first and second centuries BC, they provided a glimpse into the spiritual universe of a much more temporally remote period. Unlike their contemporaries the Romans, who expressed their spiritual life in myths, the Celts retained ideograms: dots, lines, nets, and so on. When they incorporated classical figures such as that of a horseman, it was overlain with dots, crosses, and cup-marks that sometimes practically obliterated the equestrian imagery. What mattered to the Celtic minters was not the horseman but the older symbolism that could be incorporated into the equestrian image.

Our section titled "Number," the central section in this chapter, dealt with the first "composite" (*zusammengesetzte*) numeral, "the nine." This 3 x 3 ideogram of the nine-day phases of the moon could be arranged in a square and then cut by diagonals to create a comprehensive ideogram of the cosmos. The 3x3 time pattern of dots and squares might become more complex as the 3x4 spatio-temporal ideogram, "the twelve." Then one might add the upper/lower world and create a 2x3x4 ideogram, "the twenty-four." All these increasingly complex ideograms served to represent the order of the cosmos in more detail. Indeed, with "the twenty-four," visualized as three nested rectangles with three cup-marks on each side of each rectangle, if a twenty-fifth hole is placed in the center to the innermost rectangle to support a pole, the result is a sundial that also represents the third axis of the world extending from the zenith to the nadir. König made the obvious connections to the zodiac, the months of the year, the number of hours in a day, and so on. Her point, once again, was to stress the great antiquity of the order of the cosmos that endured within our own contemporary symbolism. Or, once again, to put it the other way around, the

human beings of the Upper Paleolithic were as spiritually alive and complex as we are.

Valcamonica

König concluded *Am Anfang der Kultur* with a long chapter, a kind of case study, on the petroglyphs of Valcamonica in northern Italy. She began with a striking observation: "The instruction book of humanity is written in the sky."[110] Whether hunter or agriculturalist, humans found in their observations of the planets and stars confirmation of the principles of order. Recalling the heuristic conceptual pyramid detailed in chapter 1 of the book, König reiterated her thesis that later cultures preserved earlier insights.

According to Emmanuel Anati, who had studied the Valcamonica petroglyphs extensively, the creation of these ideograms took place during the Neolithic. The spiritual heritage found there, in cup-marks, for example, extended back to the period of exclusive Neanderthal occupation. The depth of the grooves or incisions suggested repeated ritual beating of the rock, and the numerical values—"the three," "the four," and so on—were familiar from the Upper Paleolithic symbolism of the rock-shelters and decorated caves. Many of the petroglyphs were pecked or incised on smooth glaciated rock similar to the smooth lava of Hawaii (*pa¯hoehoe*), which was also incised or pecked with petroglyphs. Anthropomorphic figures, triangles, dots, crosses, ladders—all the Upper Paleolithic ideograms—were present, thus reflecting the earlier symbol complex. In addition, new ideograms, of a bull-drawn cart, for example, indicated technological progress, but they also repeated the phases of the moon. "There was no going back to the undifferentiated origins; the many familiar elements combined into something new" even while they expressed a very old meaning.[111]

König called these developments "spiritual additions" (*geistiger Zuwachs*), the traces of which could easily enough be found in documents in the megalithic monuments of the Neolithic.[112] A discovery peculiar to Valcamonica was the symbolization of a vertical world axis, later represented in Greek and Norse myth (among others) as the tree at the center of the cosmos, reaching from the netherworld to the sky where the four "stags" (constellations) lived.[113] Next to be differentiated within this spiritual world, she said, were anthropomorphic shapes

developed from square ideographic symbols surmounted by a circular head without features and supported by triangular thighs and calves. These were not crude semirealistic portraits of humans, König said, but representations of cosmic order combining right angles, circles, and triangles. Again one might point out the striking similarity of the Valcamonica petroglyphs to those of Hawaii. König drew attention to similarities with Swedish petroglyphs as further evidence for his major thesis, that the several "cultural provinces" of the world often reverted to a common spiritual heritage using very old Upper Paleolithic forms to express the primary experience of the cosmos.[114]

The closing sections of *Am Anfang der Kultur* dealt with the persistence of the Upper Paleolithic symbols and their transformation into myths that eventually were written down. Thus, to recall an earlier noted example, one finds the images of the lunar bulls of the Upper Paleolithic changed into the great statues of bulls by the Mesopotamians, only now adorned with wings to indicate their celestial symbolic status. Likewise, Pegasus grew wings, and the lunar ox-drawn cart and Apollo's fiery horses appeared on the scene. What had changed was how the horses and bulls appeared. No longer were they clearly symbolic creatures attested by the "twisted perspective" that presented horns and hooves from one viewpoint and the torso in another, along with ideograms that added to the meaning of the imagery. Rather, the animals were more or less presented as they actually appeared in the world and an element of anthropomorphism or "personification" was introduced. "The cosmic symbol was brought down into the here-and-now; the cultural world was presented as the world of nature."[115] This additional differentiation of consciousness required new ways to express itself, which König argued could be found in myth.

The pictorial anthropomorphism, as when a celestial chariot was depicted with a driver, led the human imagination to find novel ways of expressing the primary experience of the cosmos that was outside the limitations of ideograms. That is, instead of ideograms, one found pictures that provided "an inexhaustible source for further differentiation into to actual worldly events," and myths were told to describe the cosmic order in terms of visible processes. Thus did a view of the cosmos turn into an explicit narrative; and then the spiritual context faded and the narrative was understood as an account of "facts." And so the gods became more human, distinguished only by their greater

powers—and then the creation of the gods was seen not as a cosmic event but as a kind of biology. That is, the divine context gradually seeped away from myth once stories intervened between the primary experience of the cosmos and its immediate and relatively compact expression in ideograms.

A Deeper Past

In the decade following the research that led to the publication of *Am Anfang der Kultur*, new information came to light that radically changed König's understanding of early prehistory. That was one of the motivations for writing *Unsere Vergangenheit ist älter: Höhlenkult Alt-Europas*.[116] The focus, as indicated by the subtitle, was on the "cave cults" of very early Europe. How early?

The occasional tentativeness regarding dates in *Am Anfang der Kultur* had been resolved owing to "new observations concerning the age of humanity and their spiritual capacities" (*ihrer geistigen Fähigkeiten*).[117] König referred specifically to the 1979 publication of Henri de Lumley, which reported on an excavation he and his wife had begun in 1964 at Arago cave, near Tautavel (Pyrénées-Orientales).[118] Lumley discovered several skulls from which the brains had been deliberately removed. This evidence, for Lumley, indicated a religious and so a human attitude.[119] More interesting was the age of the fossil: more than 400,000 years old. Hence its trinomial designation: *Homo erectus tautavelensis*. It was, therefore, considered to be a pre-Neanderthal human specimen. Moreover, Lumley considered the Tautavel skull to be evidence of an even older cult, which meant that continuity had to have been established with an earlier period. But how? Only, König said, by an oral tradition, which meant that this early man could speak. König again mentioned the 300-KY-old loess balls of Achenheim, which she called a "turning point" (*Anschnitt*) in human spiritual history because they indicated that humans were not content simply to collect subjects with symbolic shapes, such as skulls, but instead shaped material, in this example, loess, into spheres, which then were passed down through generations.

The skull-cult, practiced in caves, was continued by Neanderthals, König argued, and eventually by Sapiens. The combination of rectangular Neanderthal tombs, grave goods, and other markers and of cave skull-cults indicated that they, as we are, were concerned with the questions of life and death. By the

close of the Ice Age, the cult of the cave and the symbolism of the skull had lasted 320 KY.[120] Lumley also argued that the orderly changes in the sky—solar, lunar, and astral—were connected to the cave cult because of the belief that the heavenly bodies traversed the underworld to start over again each morning. Because caves often had water at the bottom of them and the heavenly bodies sank into the sea, yet another connection was made: water was the realm of the sun and the moon, and animal sacrifices near springs, the earliest evidence of which date from 200 KYA, represent the acknowledgment of a "higher power."[121]

König reiterated her argument regarding the horns of animals and the crescent moon. In addition, she made explicit once again her earlier remarks on the significance of drawing animals rather than signs: "When human beings took a colored crayon in hand, it was their thought that was expressed."[122] It was therefore significant that the artists drew bison, aurochsen, mammoths, and so on, rather than rabbits or mice. The day the first image of an animal was drawn was a "fateful hour" (*eine Sternstunde*) for humanity because, among other things, images were so much more easily and directly understood than abstract signs. Moreover, the spiritual intensity conveyed by the images was enhanced by having been created in a supernatural milieu, the underground.

König drew a few additional conclusions that went beyond her remarks in *Am Anfang der Kultur*. First, she emphasized that access to the caves was always limited, so that the experience in a cult-cave was strongly distinguished from ordinary life. This was one reason why, despite changes in "style," the imagery was passed on for 30,000 years. Second, when persons entered the dangerous depths of the caves, they were not simply seeking adventure. To be sure, they sought to contemplate representations of the heavenly bodies, but they also sought to distinguish among them, and to reproduce the basic order of the cosmos initially expressed in crossed lines. Third, Sapiens simply continued the orientation of humans to the cosmos that was already explicit with Neanderthals and inchoately present with *Homo erectus tautavelensis*. Sapiens added color, which was no small achievement, but it was done within a very ancient tradition. König's conclusion was therefore obvious: it was no longer acceptable to speak about the "obscurity" of prehistoric symbols. This was not magic thinking or hunting magic or anything equally "primitive"—such were the consequences of *our*

errors, she said, which were deeply rooted in contemporary dogmas of positivism and progress. Rather, prehistoric symbols were expressions of compact spiritual sensibilities of the reality of cosmic order.[123] They expressed Voegelin's primary experience of the cosmos.

König then illustrated her interpretive procedure by reconsidering the evidence from Lascaux. The most interesting thing about Lascaux from her point of view was that the same animals were painted again and again, in sizes big and small. The bulls, as she remarked several times, conveyed a lunar symbolism, and in this relatively late cave, a symbolism that was clearly structured. They run as if they were on the solid ground of the earth and their horns point to the top of the ceiling where "there is a large round hole. . . . It is, of course, a natural feature, but the pictures were consciously related to it."[124] More important, compared to the bulls, the humans who looked at the imagery were tiny. Thus did the cult of the heavens measure human being. But the cult expressed traditional images and, like the skies, were in continual motion. In front of the big white/dappled bull, whose head only was painted in detail, was "the three" signifying the three phases of the moon, repeated three times in red (see image 1). Likewise, the great black bull, as much by his horns as by his hooves, signified that he is a celestial bull. "No one needs either syntax or grammar; a child can understand the symbolism."[125]

Horses, she said, symbolized the sun.[126] But, compared to the bulls, they were disproportionately small. Perhaps this was because the course of the sun was more regular and did not involve the complications of death and resurrection. In later mythological accounts, the horse continued to symbolize the sun—the sun/chariot of Apollo was drawn by horses, as was the chariot of the Vedic Surya. (The later chariot of the moon was as likely to be pulled by oxen as by horses.) Antlered deer, she said, symbolized summer, and the ibex winter. In any event, the regular placement of these images was designed to assure humans of the regularity of the cosmos, a kind of expression and assuaging of their existential anguish. "Humans look for counsel and help from the heavens. Lascaux is for us a mirror of their beliefs."[127]

König also expanded her interpretation of the figures in the "shaft," the famous lanced bison, the bird, and the ithyphallic man. The shaft was the lowest part of the cave and difficult to

access (in prehistoric times). It was originally much more red than it is today—and red can symbolize life and sex (menstruation), death (loss of blood in humans and animals), and food (red meat).[128] The entrails of the bison spilled out of his belly—in three loops. The tail of the bison ended in three points and the hooves were in a twisted perspective: all were lunar symbols. "The night stars are dying here; we witness the drama of their death," and not merely the death of a natural animal. Nor was the ithyphallic man a human, König said. He has a bird's head, suggesting a messenger from the sky, and four fingers on one side and three on the other, with a "correction" resulting in four on both hands. If the four phases of the moon included the death of the moon, the figure reinforced the lunar death of the bison. If the figure was "dead," his erection symbolized the generation of new life. Lascaux, she said, provided a unique vision of Ice Age humans. We have seen that the vaulted ceiling reproduced the celestial vault—the bulls were celestial bulls. In the shaft, the ground of the cave became the ground outside the cave, just as the deep shaft opening to the red evening sky in the west represented the entry to the underworld. Indeed, the shaft represented "an image of the cave itself." It is a "place of mysteries where the old moon dies, an unknown power restored new life to him and the new cycle begins."[129] This account of one of the most famous, controversial, and enigmatic parts of the Lascaux cave combined cosmic rhythms with death-and-resurrection. It was a masterful exposition of what Voegelin meant by compact consciousness and its associated polyvalent symbolism.

König's conclusion could almost be anticipated: "The heavenly bodies do not change; nor does the human being." The analogy between human and cosmic order survived the change to agriculture from hunting and gathering. This is why in the myths passed on to us, caves remained important: Zeus was hidden in one, Jesus was resurrected from one, and grottoes, not a manger in a cowshed, have often been depicted as his birthplace. Jesus's birth was even attended by the celestial animals, a lunar cow/ox/aurochs and a solar horse/ass; and his birthday is (celebrated) next to the winter solstice. This may be a long road, but it is not an arbitrary one.

We begin by summarizing the conclusions reached by Marie König and then provide some conclusions about her work.

Human beings continue to live beneath the stars, to believe in a beyond, and to hope for an afterlife secured by ritual behavior. However, the cultic expression of these continuities changed: pictorial expression of these experiences was abandoned but the signs (points), and the indices that accompanied those representations were continued. What appeared to be a mere cipher (*Zahl*) fully contained the ancient notion of cosmic order. This abstract method of expression was an improvement because, unlike the use of animal symbols, it could not be depreciated into a kind of demonism. There existed a clarity with this abstract symbolism that continued to the present. This was why the pebbles of Le Mas-d'Azil, decorated with dots, retained their fundamental importance.

Neanderthals first discovered the motion of the celestial bodies from east to west, which furnished the two cardinal points by which humans could orient themselves and which continued until the Middle Ages. The east–west line was crossed at a right angle to define the now four cardinal directions, symbolized by four dots or four lines. From the Tata plaque of Neanderthal times to the large bulls of Lascaux with four dots to the "Lord of the four quarters" of Mesopotamia, the symbolism persisted. Likewise, the great Neolithic structure at Newgrange combined the three and the four, along with other numerals. Our understanding of history, König argued, required the uninterrupted transmission of memory and the willingness to rely on it in order to project it into the future. "The great festivals have always had a relationship with the calendar; astronomical observation is the basis of cultural life."[130] Such coincidences still exist in the present: the old tradition sustains the Christian celebrations of Christmas and Easter.

"Number and signs speak to reason, not to feelings [*Gemüt*]. They presuppose astronomical observation; they make precise the laws of astronomical motion and serve to express them. They express the order to the world of which the heavenly bodies are the instantiation."[131] However, in times of difficulty humans turned not to numbers and signs but to the heavenly bodies themselves and their rhythmic course. The celestial cycle was universal, as was the cycle of human life or the "wheel of life" that was understood to conform to the return of the stars each evening and of the sun each morning. Because humans know they

will die, in their funeral arrangements they mimic what they see in the cosmos: they are buried in the earth on an east–west axis and are consigned to the protection of the heavenly bodies, to the celestial bulls of the Upper Paleolithic, and to "our Father who art in Heaven" in the contemporary Christian world.

Death, even today, remains mysterious, but birth can at least be observed as taking place from the maternal womb, which in turn becomes a fine symbol of resurrection. This was why in the Upper Paleolithic one found not only dying and resurrected bulls but also images often identified as vulvae, symbols of the beginning of life. The presence of images of vulvae, to reiterate a point made above, was not therefore evidence of a "fertility cult," because the notion of fertility was only one constituent element of a more comprehensive spiritual ensemble that also included a cult of death and belief in the beyond.[132]

Regarding König's work, it seems to me that two points stand out for the argument I develop in this book. The first is that she provided an extensive and coherent narrative and a large amount of evidence from the Upper Paleolithic and Neolithic period to the time of the Celts to support Voegelin's concept of compactness and differentiation of consciousness. Her insights and conclusions could be translated without difficulty or distortion into the comprehensive philosophical anthropology of Voegelin. The earliest humans, arguably *Homo erectus tautavelensis*, were distinguished by a recognizable and compact consciousness. Likewise Neanderthals and the earliest Sapiens can intelligibly be discussed in terms of compactness and differentiation of consciousness based on the nonutilitarian artifacts they left behind.

A second equally obvious point is that König was an outsider, a member neither of the German academic community nor of the narrower guild of archaeologists or of other paleoscientists. She did receive acknowledgment by academics concerned with the relatively focused specialty of Celtic numismatics. More broadly, she held the view that the Celts were an important element for understanding the cultural development of humanity by their position mediating between the very early peoples (and their beliefs in the stars) and the people of antiquity whose forms of thought belonged to literate civilization.[133] Despite the Roman and Romanocentric deprecation of Celtic history, she argued that such an attitude cut us off from our remote past. In this respect there was no better proof than the Celtic coins, so many of which

expressed representation of the heavens. That is, Roman contact with the Celts needs to be understood as contact between two spiritual cultures with distinct ways of differentiating experiences of reality: the one from the east mediated by divinities, the other in the west still capable of a direct connection with the primary experience of the cosmos. The Romans were unthreatened by the cave cult, but the Christians were, largely because of the importance of the cross as a Christian and a cosmological symbol. Thus many "pagan" crosses dating from the Upper Paleolithic were obliterated, even though Christian churches recapitulated the cruciform symbolism of the caves. Only the Celts maintained the old traditions, until they, too, were Christianized.[134] Despite the occasional tentativeness of her argument, its overall persuasiveness depended on its narrative plausibility.

Those who sought to live only in the present, König observed, annihilate the inheritance of collective memory and come to grief in isolation, which was synonymous with barbarity.[135] And that, of course, was her chief criticism of professional archaeologists. She may have found her rejection by the professional archaeologists an irritation and their rudeness occasionally exasperating, but she must also have found their lack of imagination at times amusing. In part III of this book we will see that some of the properly credentialed archaeologists both filled in some of the details of König's speculative narrative and even undertook some speculation of their own. In chapter 3 we discuss the work of another archaeological outsider. The idiom of his work was closer to the positivism of contemporary science, but, as with König, he was not a progressive. Through the sheer power of his argument, his narrative, and his presentation of evidence (to say nothing of his combative personality), Alexander Marshack gained a grudging recognition from the archaeological professionals that König never did.



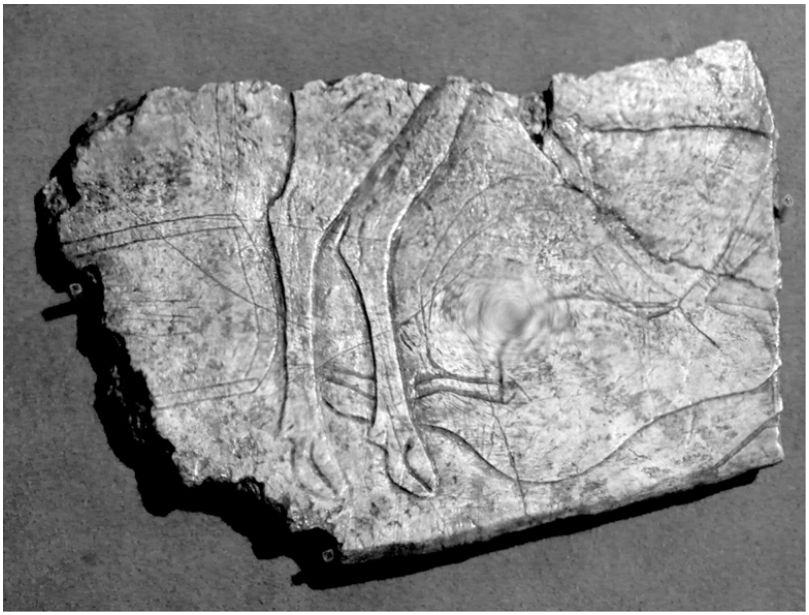
1. Dappled bull, Lascaux with 3x3 red bars



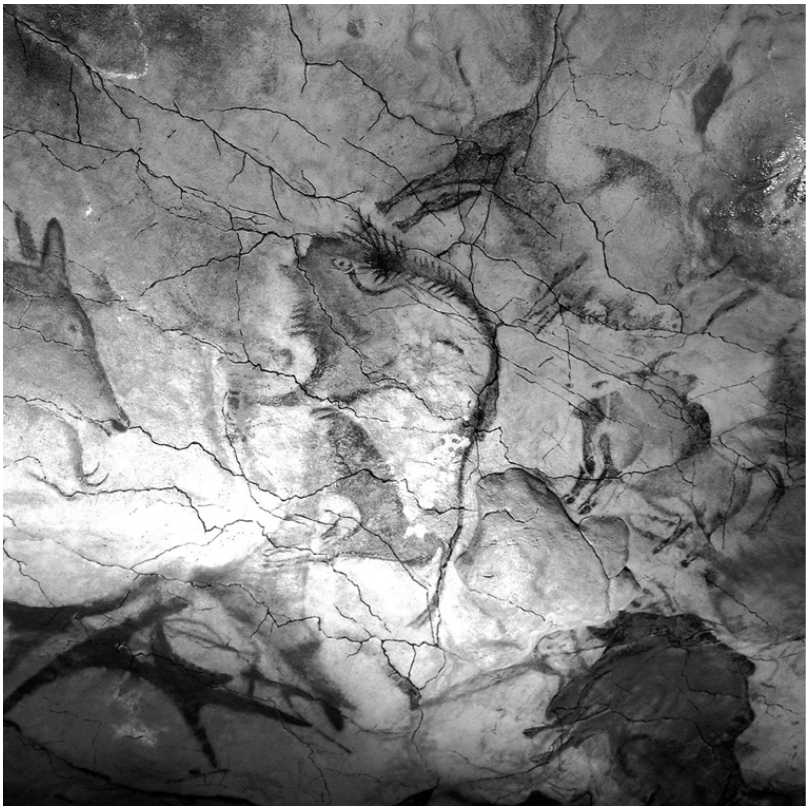
2. Gold coin of the Parisii, second century BC (Metropolitan Museum of Art)



3. Venus of Brassempouy



4. Pad with woman and reindeer; reindeer antler from Middle Magdalenian period (National Archaeological Museum of Saint-Germain-en-Laye)



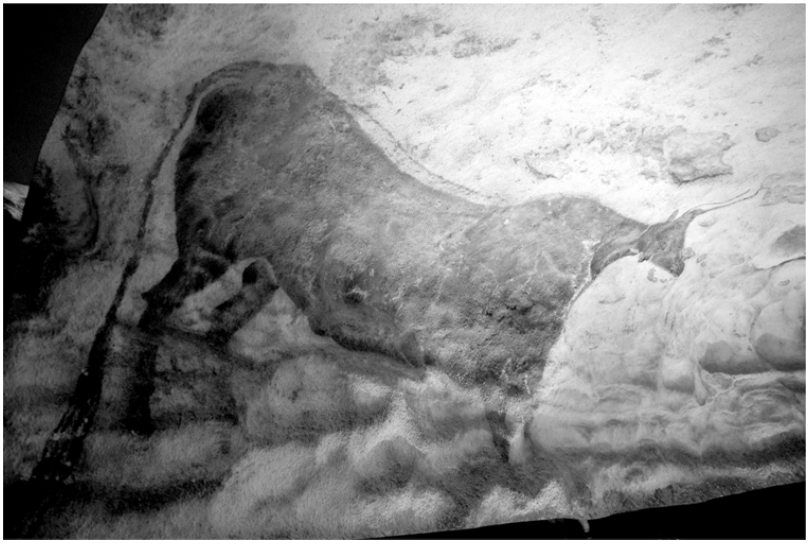
5. Ceiling painting from the Altamira cave, Spain



6. Painting from the Chauvet cave (museum replica)



7. Lions painting, Chauvet cave (museum replica)



8. Lascaux cave painting

CHAPTER 3

The Early Work of Alexander Marshack

The Problem of Beginnings

Alexander Marshack (1918–2004) was born in the Bronx. He attended high school in the borough and received a bachelor's degree in journalism from the City College of New York in 1943. He was rejected for military service that same year owing to severe allergies but served as the wartime director of publicity for the Red Cross in the mid-Atlantic area. After the war he continued his life as a journalist, branching out into radio and later television production and writing. He was also a skilled photographer and for several years worked for *Life* magazine. In 1958 he was commissioned to write a book on the International Geophysical Year (IGY).[1] A few years later during the summer of 1962, with the Soviet and U.S. space programs well underway, he was asked to write a book with Robert Jastrow, then director of the Goddard Space Flight Center, for NASA. It was to deal with how human beings had come to the point of space exploration, including a projected moon expedition, and the technical problems involved with a lunar landing.

Marshack's specific task was to provide the historical and scientific context for space exploration. In 1963, he started on a lengthy research program, including hundreds of interviews with scientists and military and civilian experts involved with both the U.S. and the Soviet space programs. For two reasons it turned out to be "an almost impossible task."[2] First, among all the persons

he spoke with, “not one person I met knew clearly why we were going into space or how it had come about.” The vast teams of specialists knew only their specialties; no one had thought about the big picture. As Marshack understood his task, however, it was to see why the space program had been started, why it had been a success, and what it all meant. In consequence, after a year of effort, Marshack concluded he could only “report the scene, capture a few of the personalities, explain the science, problems and plans and give some of the fragmented historical record.” That is, the fragmentary nature of the evidence meant that a coherent and nonfictional narrative simply could not be written.

His second problem was more interesting. At one point he had to write a few paragraphs on the “apparent beginnings of mathematics, astronomy, and science.” This task proved even more difficult for many of the same reasons: “There were not enough facts.” Looking at the available accounts of the beginnings of mathematics, astronomy, and so on, “I was appalled at what seemed the inadequacy of the record.” Marshack described his experience as one of frustration. He sensed that something was missing from the historical and prehistorical record, but he didn’t know what and so didn’t know what to look for. When he tried to account for why he thought “something” was missing, he recalled his own experience as a well-traveled journalist, photographer, and author. From reflecting on his own experience, that is, Marshack contextualized the space program within a range of other human activities: from the contemporary lives of persons living in the New Guinea jungle and starving farmers in India, to the much earlier lives of European mammoth-hunters or of persons who “had painted the caves of Ice Age Europe.”[3]

Looking at the archaeological evidence, Marshack drew the obvious conclusion regarding brain size and skeletal morphology. Had his reading been in the area of philosophical anthropology rather than social and paleoanthropology he might have reflected on the constancy of human nature and its relation to historical change. In the event, he gained a heightened sense “of the inadequacy in the traditional image of prehistoric man and his culture.” He also sensed that the traditional accounts of how mathematics and astronomy “suddenly” appeared with the Babylonians or Greeks or Chinese were highly improbable.[4] Marshack was sufficiently reflective to note that his uneasiness stemmed precisely from his being an outsider to the established

archaeological discourse. None of these achievements—art, agriculture, mathematics, writing, calendars, urbanization, and so on—could have happened suddenly: "They must have come at the end of many thousands of years of prior preparation. How many thousands was the question." This was an insight that came to him on the basis of his work on the IGY when he discovered that contemporary scientists were preceded by generations of earlier work about which they knew little and often were entirely ignorant of. He suspected that the same problem existed in the reality of prehistory and was reflected in archaeological accounts of it.

When he was writing his book on the IGY, Marshack said he was "struck" by the thought that all of the programs that he had discussed were "time-factored," including the IGY itself, which was timed to coincide with an eleven-year cycle of maximum sunspot activity. We discuss the significance of Marshack's concept, time-factoring, in the following section. When he first hit upon the term, Marshack noted that a time-factored process in the natural sciences was "almost tautological" because "all processes," whether "simple or complex, sequential or interrelated, finite or infinite, develop or continue and have measurable rates, velocities, durations, periodicities and so on." Moreover, sciences that study these processes were themselves time-factored because the processes of cognition, research, analysis, and interpretation were also simple or complex, sequential or unrelated, developmental or cumulative. The same was obviously true in the historical sciences also, with two differences: (1) in philosophical anthropology, the various historical symbolizations of the historically transcendent, eternal, infinite, and so on also have to be considered; and (2) historical reality was also self-interpretive, which made the notion of any universal scientific progress questionable.

In the spring of 1962, Marshack visited Ralph Solecki, an archaeologist, in his office at Columbia University, to discuss the problem he was having writing the few paragraphs on the origins of mathematics and astronomy. Solecki had excavated Shanidar cave in northeastern Iraq, which had successively been inhabited by Neanderthals and Sapiens. Marshack wondered what skills the Sapiens had developed in terms of village-building and agriculture that conditioned the "transition" between the two kinds of humans.

Agriculture, Marshack said, was more intensely time-factored

than hunting in that it required continuous awareness and monitoring of the seasons, whereas the seasonal monitoring required by hunting could be intermittent. That is, even if seasonal migrations of game were important, they were not as important as was, say, the date of the annual flooding of the Nile for deciding when to begin agricultural planting. Marshack then asked Solecki: Where did these enhanced time-factored skills come from? What was the archaeological evidence for them? "Solecki laughed, and said that I was asking questions that archaeologists had not yet dared to ask."[5] Most archaeologists were concerned with establishing chronology and cataloguing the material record, which at the time was understood as a series of static cross sections, not a source of time-factored information.

Solecki suggested that Marshack discuss the problem with André Leroi-Gourhan, then at the Musée de l'Homme in Paris, and Marshack wrote him a letter asking whether, in Leroi-Gourhan's view, any of the cave art was seasonal, periodic, or "time-factored." The French scholar replied, indicating that, in his view, the imagery did have a seasonal significance and was therefore related somehow to the allegedly "sudden" invention of calendars in the ancient Near Eastern agricultural empires, but also that there was no hard evidence for it.

In April 1963, Marshack returned once again to the troublesome paragraph on the beginnings of science in the ancient Near East. This time he looked at an article he had clipped from *Scientific American* about a year earlier.[6] The author, Jean De Heinzelin, had undertaken a conventional excavation at a previously discovered site at Ishango, in what was then the Belgian Congo. It was situated on Lake Edward (now called Lake Rutanzige), near the headwaters of the White Nile and at the time was believed to be a Mesolithic site (ca. 8000 YA). Ishango is now dated at 20–25 KYA.[7] De Heinzelin catalogued the artifacts he uncovered, mostly bone spear and harpoon points and stone tools, and mapped a trade route that diffused the bone pieces across the continent: "The most fascinating and most suggestive of all the artifacts at Ishango is not a harpoon point but a bone tool handle with a small fragment of quartz still fixed in a narrow cavity at its head." He speculated that it might be an engraving or tattooing implement or possibly used for writing. "Even more interesting, however," he went on, "are its markings," which he described and illustrated. "The pattern of these notches leads one to suspect that they represent more than pure decoration."[8]

Looking at this article in *Scientific American*, Marshack reported once again that he had a "feeling" that something was missing. How could one "decode" the scratches, which at the time were understood to have been made at least two or three thousand years prior to the earliest calendars or hieroglyphics? "I decided to try a hunch, based on ideas suggested by the book I was writing. In fifteen minutes I had 'cracked the code' of the Ishango bone."[9] That was it, what Husserl would call *Ein Aha Erlebnis*. In light of several of Marshack's later remarks, it would be hard to overstate the importance of this sudden insight. The experience was not a bolt from the clear blue sky but rather was a discovery of what he had been looking for, namely, a precalendar but yet calendric document, that had been hiding in plain sight, scratched on the Ishango bone.

A few years later, recounting the sequence of events to Calvin Tomkins for the *New Yorker* profile, Marshack recalled that he had been working on the problem of the origin of calendars. He had asked the experts, in this case Egyptologists, about the origin of the calendars they had studied: "And every one of them said approximately the same thing: 'when we find it [a calendar], it is already developed.'" The Egyptologists agreed that the origin of calendars must be dated thousands of years prior to the existing calendars, which date from 3 to 4 KYA. Marshack concluded: "I seemed to have stumbled on a prehistoric beginning—and nobody else was working on it. . . . Everybody said that the problem was fascinating and the answers should be there, but nobody had ever tried to find them." Not surprisingly, "I got excited as all hell."[10]

In *The Roots of Civilization*, published a decade or so after his initial excitement at "cracking the code" of the Ishango bone, Marshack provided a calmer account of what his rather dramatic formulation actually meant. The scratches, he said, were "notational," a concept that we examine in more detail below. A notation, he remarked by way of summary, was both a record and it was cumulative. *Ex hypothesi* Marshack thought it was a celestial and probably a lunar record. He later said to Leon Svirski at *Scientific American*: "By the nature of the assumptions I had made, I had to test *everything* against the lunar concept."[11] Marshack's reasoning about a lunar record expressed in the notations was commonsensical enough: diurnal, lunar, seasonal, and like changes were as constant as birth and death, something of which even *Homo erectus* might have been aware owing to the

endowment of an enlarged brain with specialized structures for visual and kinesthetic coordination, memory, and so on. To take a modern example, the North American aboriginal plains populations counted past years by winters, "each winter being known for some event taking place at the time, instead of being numbered as is our custom."[12] Successive years could be represented on printed charts that served as mnemonic aids.

So far as lunar sequences were concerned, the analyst had to use his or her imagination to see how sequences were observed by the one doing the notation:

> One cannot, therefore, "crack the code," as scientists have cracked the codes of the ancient structured writings of the early civilizations from Egypt, Mesopotamia, Phoenicia, and Crete, or as they cracked the codes of the number and astronomical systems of many of these early civilizations. If one approaches the marks as mnemonic, that is, as a storied notation, it is also impossible to perform analysis, because the references would be not to a periodic, constant pattern but to a random patterning. Fortunately, the engraved bones do indicate a consistent grouping by "periods" made sequentially and therefore lunar tests can be made on their patterns.[13]

And when you actually do count the "days" between, say, full moons, the arithmetic count will vary. "To the maker of such a notation, the 27 and the 33 [marks, notches, scratches, etc.] could easily represent 'two moons.'"[14] That is, the month is clearly divided into periods (new moon, first quarter, full moon, etc.), but they are not of arithmetically equal periods. This was Marshack's great insight. He called it a "*storied* notation," because the story could be checked for accuracy by examining the notations as a reflection of actual and observable lunar changes that *we* could account for arithmetically.

To return to the initial account, Marshack said he diligently tried to disprove his interpretation. He thought about asking Leroi-Gourhan and Solecki about it, but "I did not dare." He then put aside the nearly complete manuscript on the space program and devoted a year to research, chiefly in the New York Public Library, and to writing up his account of the Ishango bone and comparing scratches on it to similar marks found on known European artifacts of the Upper Paleolithic, the photographs and drawings of which were available in the scientific literature. His publisher turned down Marshack's draft manuscript dealing with

the Mesolithic and Paleolithic origins of calendars; on reflection, Marshack agreed it is was not yet fit for publication.[15] His work, after all, had been based on library research and not on the firsthand examination of artifacts. Nor had he shown his interpretation to any specialists, so he had no clue whether a scientifically formulated version of his argument existed or, if not, whether his commonsensical narrative was even remotely plausible to the expert community.

In the late spring of 1964, Marshack spoke with Gerald S. Hawkins at the Smithsonian Observatory, Harvard. Hawkins had recently argued that Stonehenge was among other things an observatory insofar as many of the alignments of the stones were astronomical and calendric.[16] Hawkins checked Marshack's arithmetic, performed some statistical analysis, looked at his astronomical argument, "and said yes, I seemed to be correct in methodology and in at least a portion of the findings." Hawkins suggested Marshack discuss the problem with a leading archaeologist or paleohistorian.

Marshack then phoned Hallam L. Movius Jr., professor of archaeology at Harvard, who was then in France where he was conducting his long-term excavation of the Abri Pataud in Les Eyzies in the Dordogne.[17] Marshack informed Movius: "I think I have solved some of the notations of the Upper Paleolithic." To which Movius replied, "There are no 'notations' in the Upper Paleolithic." Marshack tried to explain what he meant by "notation" and asked if he might visit Movius to set out his account in detail. Before leaving for Paris on August 4, Marshack contacted Philip Abelson, the editor of *Science*, and explained to him in outline his theory and his plan to consult Movius.[18] A few days later he was in the Dordogne to explain his method and its results. Movius was initially skeptical, but by the end of two days' discussion he concluded that Marshack might have achieved a "breakthrough" of sorts. Movius wrote later in the fall, "I was tremendously impressed not only with his results, but also with him and his general attitude; he has a surprisingly profound understanding of the significance of the subject on which he has been conducting his research."[19]

Movius had also accumulated a great deal of experience in the highly competitive world of American academic archaeology and gave Marshack some advice that turned out to be prescient. He explained that archaeologists did not welcome major new ideas, so a deliberate and incremental strategy was required. Movius

explained to Marshack that "I must proceed both with haste and caution. I must leave France at once, talk to no one, and show no one the manuscript. I must publish as soon as possible to establish priority, but not too much, merely a short introductory paper." Movius then told him to return to Europe quickly and check the European materials firsthand, because, Movius said, the existing photographic evidence and published sketches of archaeological materials were inadequate for the serious scientific work Marshack proposed to undertake.[20] Marshack returned to New York and began writing a short paper outlining his argument.

Early Formulations

The paper, "Lunar Notations on Upper Paleolithic Remains," appeared in early November in *Science*.[21] Marshack's first scientific publication was two and a half pages long. He began by noting that Hawkins's papers on Stonehenge indicated an "unexpectedly complex" understanding of solar and lunar events. The presence of such astronomical skill and knowledge elsewhere in Eurasia, notably in the Near East, raised for Marshack "the question as to whether an earlier, basic astronomical skill and tradition existed" inasmuch as the sophistication of Stonehenge "indicates an evolution of some thousands of years." Marshack then reported what must have struck his readers as an astonishingly bold remark: "Computations and analyses I have made have disclosed evidence of lunar observation in notational sequences and markings dating from the Upper Paleolithic period" extending to around 35 KYA. These very early notations, which can be found on thousands of sequences engraved on mobiliary art and also in rock-shelters and the decorated caves of Franco-Cantabria, provide the context and prelude for the later Neolithic and agricultural civilizational structures, such as Stonehenge. At the time, Marshack allowed he was surprised at how far into the past he could trace these calendric notations.[22]

Marshack provided four brief accounts of artifacts from three different prehistoric periods. The first two were painted Azilian notations from Canchal de Mahoma and the Abri de las Viñas in Spain, around 12 KYA; the second, a piece of Magdalenian mammoth ivory from Gontzi, Ukraine, dated from the Late Paleolithic (ca. 17–12 KYA); the third, a piece of Aurignacian bone from Kulna, Czechoslovakia, was at least as old as the mammoth ivory. All, Marshack argued, contained calendric

notations. He concluded that "the questions raised by this evidence . . . entail a re-evaluation of the origins of human culture, including the origins of art, symbol, religion, rite, and astronomy and the intellectual skills that were available for the beginnings of agriculture." This rather grand statement was followed by the announcement that he had begun the task of "reconstruction of the culture of *Homo sapiens* in the Upper Paleolithic period." The combination of an origin of "art, symbol, religion, rite and astronomy" into a single complex was, in the language of our chapter 1, equivalent to the compact experience and symbolization or the compact consciousness of the primary experience of the cosmos.

The timeline, a little over a year and a half, for Marshack's initial achievement was impressive. In April 1963, he returned to the troublesome paragraph about the beginnings of mathematics and science. He looked at the account in *Scientific American* about the Ishango bone, and within a short period he "cracked the code" concerning what the incisions of the bone expressed, namely, a calendric lunar sequence. (More cautiously one would speak of the hypothesis of a calendric lunar sequence, as Marshack later would do; at the time he was understandably more enthusiastic than cautious.) Starting in the summer of 1963, he worked for more than a year in libraries looking at photographs and drawings of other artifacts in the scientific literature and tested his code-breaking technique on what he could observe from this secondary evidence. By late spring or early summer of 1964, he had a manuscript for a book based on this extensive secondary research. During the summer of 1964, he spoke with Hawkins and then with Movius, both of whom advised him on the next steps he needed to take. In November 1964, he had taken the first: the short piece in *Science* established his "priority," as Movius had advised.

With Movius's help, he applied to the Wenner-Gren Foundation to study firsthand in European museums and private collections the artifacts that had become familiar to him from published accounts.[23] Marshack began his Wenner-Gren–supported work in the winter of 1964–65. Movius continued his support by writing letters of introduction to several senior scholars in France.[24] In part 1 of *The Roots of Civilization*, Marshack provided a retrospective account of what must have been an exciting and demanding couple of years. He also explained in great detail and with commonsensical diagrams how

his “code-breaking” technique actually worked. Finally, he also clarified two interrelated concepts that we have already encountered: notation and time-factoring.

The concept of time-factoring was initially developed in Marshack’s manuscript about the space program. There he argued that “the brain was essentially a ‘time-factored’ and a ‘time-factoring’ organ.” It was time factor*ed* insofar as it had evolved over millions of years and had grown and developed sequentially in each individual human; it was time-factor*ing* insofar as “it remembers, it reacts, it plans, it participated in the dynamics of relations and processes outside of it.”[25] For Marshack, that is, the time-factoring cognitive capability of the brain was a fundamental attribute of human beings.[26] The implications Marshack drew, not the theoretical adequacy of this rather crude anthropology, are of interest in the present context.

The ability to develop and hand over a tradition was central to Marshack’s concept. In the example of the Ishango bone, if it were in fact a calendric document, the author of it would have had to rely on observational skills that had taken generations and perhaps thousands of years to develop. This is why, in the *Science* article, Marshack looked at material that was thousands of years older than the Ishango bone was then thought to be. Marshack drew an additional implication: if the Ishango bone were time-factored, it was because it displayed a notation. The two concepts, in other words, were tied together: “If . . . we assume it [the Gontzi bone, in this example] to be notational, then it must be ‘time-factored,’ both in the making and the meaning.” The marks on the bone must have been conceived sequentially, and the author of the document, the human being who actually made the scratches, “must have known the ‘story’ or meaning that was being structured by the sequence,” in this example, *ex hypothesi*, a lunar sequence.[27]

Marshack’s use of the term “notation” attempted to preserve what he took to be the relatively imprecise or at least nonmathematical information recorded on the Upper Paleolithic mobiliary art. The most obvious meaning of notation was simply “record.”[28] Some of the differences in clarifying what he meant came out in his correspondence. For example, he several times had to remind his colleagues and critics that lunar notations were not “astronomy,” but at best a “precursor” to astronomy.[29] Because notations were sequential and so of varying periods of time, not always a single twenty-four-hour day, they were not

arithmetical either.[30] These sequences, Marshack said, could be termed "phrasing," which suggests an image taken from music.[31]

His problem was, in fact, both complex and imprecise. He explained to Leon Svirsky, "The game I am playing is a double one. I am trying to find a pattern but I am also trying to re-create the way in which ice-age man played *his* game, to find *his* system and his pattern. This goes beyond numbers and counting. . . . It is *not only* a number game, it is also a *story* game and it extends to rite and ritual."[32] As a "story game," the notations would also convey a meaning.

In a letter to Hawkins in June 1964, Marshack responded to some questions Hawkins had raised about whether the notations Marshack found were representative of all the artifacts he had examined. Marshack replied: "The order of the presentation [of scratches, lines, etc.] is not random." It starts with simpler lines, without any hint of "art" and then proceeds to more complex examples. He noted too that "I have done over a thousand such 'readings' and find that the lunar pattern and phrasing is always present." At the same time, he said, some subgroupings may have no astronomical significance:

> They would vary month to month, season to season, tribe to tribe, culture to culture, and generation to generation. For these are "storied" periods. Usually such periods would fall under the aegis of some deity, animal, or symbol. The tendency to find such "storied" breakdowns would increase as one finds the notations more closely related to the ceremonial and storied animals. There is therefore a differentiation between observed periods and storied periods. But they are not contradictory or mutually exclusive.

"Storied" periods, which is to say, meaningful periods, may refer to ritual days, days of dance, purification, good or bad luck, and so on, that sometimes may become weeks or even months, as, for instance, with initiation rites. "The point about these storied and ceremonial periods," Marshack said, "is that they always occur in the right season, and usually at some lunar-solar point. They are *related to and come within* a lunar-solar observation."

Marshack then indicated that there were three kinds of notation: (1) day-to-day notation, which was highly correlated with lunar phrasing—this was observational; (2) entirely storied, made in advance and consisting of smaller or shorter periods within the lunar, observational count—here there was no

correlation with the lunar count but these periods were (somehow) related to it; (3) a combination of the first two, based on lunar phrasing and storied periods that were related to lunar/solar points that marked events. Marshack concluded this elaborate, obscure, and highly speculative account with a more modest observation: "I suppose it is true that the main thesis of the book would hold if only *one* notational sequence from the ice age were clearly proven to be lunar. For the revolution in our thinking about man and prehistory would begin there."[33] Hawkins rather mordantly replied: "How these notations developed into Stonehenge is not clear."[34]

Years later, after having published a great deal on lunar and other notations, most of which was more focused than the rather grand notions Marshack discussed in his prepublication correspondence with Hawkins, Marshack wrote a letter to the editor of *Scientific American* that distinguished between arithmetic and notational calendars by raising the possibility of a year consisting of thirteen and a half lunar months, with the year beginning with the spring equinox rather than a specific "arithmetical" date, such as January 1. That is, he explained, "Indian lunar 'calendars' were not based on numbered years of twelve set months accurately following one another but were based on set sequences of 'moons' that were seasonally and phenomenologically named."[35] Accordingly, a lunar "year" could last from nine to thirteen "months." In modern terminology, one would say that the notation of Indian lunar calendars expressed observed cosmic sequences.

Later, in a letter to Chris Scarre, Marshack called notation "a form of visual problem-solving by the maker and, at a different level, by the contemporary analyst."[36] In short, for thirty years Marshack used the term "notation" along with associated terms, such as "storied" and "time-factored," in ways that were not always self-evident. Moreover, he did so usually in an experiential context that asserted that he had looked at a lot of artifacts, and this is what made sense to him. Moreover, he implied, if you had looked at as many examples and in the same way as he had, it would make the same sense to you, too. It seems to me that Marshack's terminological ambiguities, and many of his later disputes over method stemmed from the inductive procedures he adopted after he "cracked the code" of the Ishango bone. If, as he claimed, his only assumptions were that the bone (and other Upper Paleolithic mobiliary art) was (1)

time-factored and (2) notational, so that it might possibly reflect a lunar notational story, as he said in *The Roots of Civilization*, he would necessarily proceed only on the basis of internal evidence of the markings themselves.[37] And, of course, it is true that he presented his argument in *The Roots of Civilization*, more than in the initial article in *Science*, in a tentative way. "Hesitantly," and with caution, he said, he studied the photographs and drawings, but then "slowly . . . the assumptions and computations, the comparisons and the eliminations of possibility began to give me feelings that at times approached certainty."[38] Thus, for example, when he finally got to examine the Blanchard bone or plaque at the Museum of National Antiquities, now the National Archaeological Museum, in Saint-Germain-en-Laye, outside Paris, he immediately recognized, on the basis of his lengthy study of library materials, a sequential lunar pattern. He remarked to Movius, "I actually found a Magdalenian 'Rosetta' stone, *one bone* [in the museum] that classified the procedures and the path through some of the most difficult and complex of the Magdalenian pieces."[39]

In fact, his analysis of the Blanchard plaque was nothing like a Rosetta stone, which had allowed scholars to translate previously unknown Egyptian hieroglyphs into known languages because the known languages (Demotic Greek and Classical Greek) were also inscribed on the stone. Of course, Marshack was conscious of the limits of his inductive procedures. Such insights would invariably be accompanied by doubts. "Was I seeing what I had wished to see, what I had prepared myself to see?" he asked himself.[40] Movius had raised this same problem in 1967: "You should always remember one thing, namely, what you have found and seen is quite an individualistic 'discovery.' In other words, another person looking at the same pieces could conceivably see something quite different from what you yourself have seen. . . . One has to have a great deal of very specialized background, interest and understanding in order to even begin to decipher the curious patterns which you have so skillfully depicted in your letter."[41] Grahame Clark later asked him the same question: Did you select only what fit your theory? After all, "with sufficient ingenuity one can detect calendrical notation on all manner of artifacts devised for functional purposes."[42] That is, induction invariably introduced the issue of judgment and connoisseurship, which to critics was indistinguishable from subjectivity. Even if friendly or not-so-friendly critics had not reminded him of the

problem, Marshack was fully aware of it on his own.[43]

Marshack's answer was twofold. First, he argued that his results "are neither theoretical nor interpretive, but absolute. The method itself establishes the accuracy."[44] This "intensive internal analysis" was not arbitrary because it referred to external realities, namely, the observable or "phenomenological" lunar sequences against which the engraved notations could be compared for accuracy.[45] His second answer, which concluded part 1 of *The Roots of Civilization*, was that he had discovered, mainly through his use of a microscope to magnify the inscriptions on museum artifacts, "a growing series of interlocking controls." He listed five sets of "controls": (1) the numerical counts of groups and of sequences engraved on the bones—these sequences reinforced one another because of their regularity; (2) the "invariant phases of the moon" to which the sequences notatively referred; (3) the visualization of the moon that can be observed from earth in terms of phases; (4) the new facts brought to light by the microscope; (5) because the analysis produced accumulated results, their internal consistency, comparison, and grouping would add to the plausibility of the argument. Marshack was to be challenged on all these points.

With Movius's help, Marshack secured a research grant from the Wenner-Gren Foundation shortly after his *Science* article was accepted.[46] In March 1965, he submitted a report to the foundation providing information on how he had so far used their money.[47] Marshack began by characterizing the *Science* paper as presenting a new method and a novel concept to analyze and to interpret Upper Paleolithic engraved sequences. It was, however, limited by several "serious restrictions" and was scarcely more than the articulation of a hypothesis. "Enlightening, perhaps important, perhaps even crucial, but still only a hypothesis."[48] Direct examination of the artifacts under a microscope overcame the limitations we noted of having to work with photographs and drawings available in the published scientific literature. Using a microscope for the first time, he examined French artifacts stored in the National Archaeological Museum.[49]

His most significant discovery was that, under microscopic examination, what looked like a simple design or composition to the naked eye and had been presented in the scientific literature "in uniform black-line renderings" turned out to have been made by several different tools whose points varied greatly. He presented the foundation with slides of several artifacts dating

from the Aurignacian (45–35 KYA) to the Magdalenian (17–12 KYA) and from four different sites.

Marshack was enthusiastic about his discoveries. A bone from the Gorge d'Enfer (in Tayac in the Dordogne) that had always been considered a simple and "decorated" artifact turned out to be neither. It had been engraved by more than thirty different tools on at least thirty different occasions, and was, to say the least, complex rather than simple. Moreover, the sequence, he said, turned out to be a lunar notation and not a decoration at all. Other artifacts provided even stronger confirmation of being lunar notations when examined microscopically. One artifact contained three distinct notational sequences in three different styles, each on a different face of the bone. "On this bone," Marshack said, "it would be difficult to prove a lunar sequence unless one used a microscope to determine, not only lunar phases and sequences, but the order of marking and changes of tools."

Marshack concluded his report with the observation that he was able to make his discoveries because he had good technical equipment. However, the 35-mm camera he used had a close-up lens that was insufficient to show microscopic details of the grooves made by the inscribing device, and it had an inadequate depth of field. He proposed acquiring better equipment so as to render photographs of his discoveries in sufficient detail to be scientifically acceptable in publications. In the event, he received sufficient funds to purchase an improved binocular zoom microscope and an adequate camera that, a few years later, were routinely used by French researchers.[50]

In the spring of 1965, Marshack also obtained a grant from the Bollingen Foundation to supplement the Wenner-Gren support. In March of that year, Marshack wrote Movius a letter from Paris bringing him up to date on his work at Saint-Germain-en-Laye. He noted that Leroi-Gourhan and Laming-Emperaire had visited his workroom and he had introduced them to microscopic analysis. "The one problem," Marshack said, "still seems to be a hesitancy on the part of [René] Joffroy," the director of the museum, "to allow 'his' materials to be photographed and the Piette materials to be looked at."[51] Initially, Joffroy told Marshack that he couldn't photograph the artifacts because the hot lights could harm the surface of the bones. Marshack replied that he did not use hot lights but a stroboscopic flash that had already been tested in New York to ensure there was no heating of the object photographed. "Not only are the lights not turned on

long enough to warm the artifacts, but the bulbs themselves hardly have any time to heat. This is somewhat the same system used by biologists in photomicrography of living cells where even one degree rise in temperature must be avoided."[52] Movius remarked that Joffroy "has absolutely no business whatsoever either to deny you access to the collections or to deny you permission to photograph the materials."[53]

In the event, Marshack was able to get access to the materials on his own. His proposed French publisher, Thérèse de Saint-Phalle, was a friend of both André Malraux, the minister of cultural affairs, and of Charles de Gaulle, president of the Republic. She arranged a meeting with Malraux's deputy, M. Cougnon, who told him that Malraux "was deeply interested in my work and asked what I wanted. He then picked up the phone and called Joffroy and told him that the Minister (Malraux) was personally interested in seeing to it that I got everything I needed and to open the Piette collection and the reserves to me." Joffroy was furious and told Marshack, "It is not proper to go over my head! It is not proper to go to Malraux!" Marshack added, "I think there are hurt feelings there now and have no idea how the ripple will widen. Yet somehow I felt that the Piette collection was necessary [to examine]. Unfortunately, it was obtained this way."[54]

Movius replied that he was "somewhat amused" by Marshack's account and added, "I certainly would not let it worry you in any way whatsoever. Joffroy himself is by no means above operating in this manner—at least according to stories I have heard. In any case, you should keep me informed of any and all developments."[55] Meanwhile Marshack had written a very diplomatic note to Joffroy explaining that the Malraux intervention was all a misunderstanding owing to his poor grasp of French and thus an impaired ability to follow the rapid conversation between Thérèse de Saint-Phalle and Cougnon. He then asked Joffroy for permission to work during the lunch break. Joffroy replied, "I cannot allow you to work during the lunch-time, from 12 to 13.30, because that would be opposite to the regulations of the Direction des Musées de France and I am convinced that my Department would not accept this demand if I put the question."[56]

Marshack's interactions with French citizens continued. A couple of weeks later he wrote to Movius with some exciting news. He had met a school principal, who wanted to know "if

there was anyone in America that would want to buy his little museum and all its collection! He said he knew it was illegal, but the property is private and the government didn't have to know." Marshack then asked, "Is the Peabody interested?" Movius replied in no uncertain terms: "Do you realize that if this institution or anyone connected with it, for that matter, were ever caught in such a 'deal,' that would mean the end of all permits to conduct research in the field of Paleolithic archaeology in France? . . . the Peabody Museum is *not* interested."[57]

In a little more than eighteen months, Marshack had come a long way. With Movius's help he had shown himself to be adept at bureaucratic politics and grant acquisition and also an innovative and technically competent scientist. He had also learned that opportunities of questionable legality were out there and were to be avoided, and that the world of Paleolithic archaeology was highly competitive.

First Published Reports

As is often the case with academic publication, the time between the writing of a paper and its appearance in print can stretch into years. This was certainly true with Marshack's early publications that were based on the direct examination of artifacts in European museums. During 1966 and 1967, Marshack wrote most of the manuscript (in English) of what eventually was published in French as *Notation dans les Gravures du Paléolithique Supérieur: Nouvelles Méthodes d'Analyse*.[58] This monograph set forth in detail for the first time Marshack's method of examining the artifacts along with a summary of his early discoveries.

Movius's preface summarized Marshack's research on calendars from Egypt and Mesopotamia and how he was led to examine artifacts of a much earlier period. He drew attention to Marshack's skill as a photographer and to the significance of this new technology. Because anyone could replicate Marshack's method, "this new methodology and the results to which it leads are in no sense subjective." Furthermore, "the analyses of Mr. Marshack have demonstrated that the notations also presuppose a non-arithmetical system that differentiates the 'strokes' or the periods of notation based on visual attributes."[59] He concluded that Marshack had provided additional evidence for the intellectual, cognitive, and symbolic capacities of Upper Paleolithic humans that go far beyond what archaeologists and

other specialists had previously argued.

Marshack's self-appraisal as dealing chiefly with "method" was deceptively modest. *Notation dans les Gravures du Paléolithique Supérieur* was, to begin with, the first detailed presentation of the evidence and the method that the 1964 article in *Science* announced. Most obviously, microscopy revealed information that was invisible in photographs, to the naked eye, or with the aid of an ordinary magnifying glass. The *Science* article used only four examples that were separated by time and space and were based on published photographs. *Notation* was based on the detailed and direct examination of several more artifacts, mostly housed at the National Archaeology Museum. Many of the artifacts discussed in *Notation* were also discussed in *The Roots of Civilization*, often in the same words. The first part discussed Aurignacian and Perigordian materials (ca. 38 KYA to 20 KYA) and the second Magdalenian (17 KYA to 12 KYA). "If the notation hypothesis is correct," he wrote, "it is already extremely old and both well-defined and widespread."

He concluded from his study of the older materials that, when Sapiens appeared in Europe, they were capable of visualizing and conceptualizing complex temporal reality that included seasons and lunar changes, puberty, menstruation, birth, and death: "Apparently, at the center of this conceptualization of temporal reality one finds lunar periodicity and notations. This notation was possible before the appearance of writing and perhaps before any numerical system, and, in a certain sense, may have led to them." Moreover, the notational system was taught and learned, which made it the remote source of art, religion, writing, astronomy, and other specializations that developed from the subsequent temporal experiences of humans in any civilization. Even if we have no access to the myths, language, and culture of prehistoric humans, he concluded, his analysis had uncovered a genuine technology "precisely because it is capable of reconstituting a sequential and temporal process. That is, of course, the foundation of all science."[60] He had, in other words, completed the project that he had only sensed as a puzzle during the IGY, twelve years earlier.

The second part of the monograph, like the first, dealt with several Magdalenian artifacts that he analyzed, generally more briefly, in *The Roots of Civilization*. Marshack concluded from his examination of six objects found in Case One at the museum in Saint-Germain-en-Laye that there existed a 25,000-year tradition

of notation extending from the Aurignacian to the terminal Magdalenian. “The demonstration of this tradition and of the lunar hypothesis can appear more evident in one example than in another, but, if one considers this ensemble as the start of a body of analyses and interpretations, these six examples prove that there exists an Upper Paleolithic tradition that is very likely lunar.”[61]

Marshack’s achievement was not, he said, a “decoding” along the lines of writing or arithmetic—despite his earlier enthusiasm about his having discovered a Paleolithic Rosetta stone. “What has been explicated is a process according to which notations prior to writing can be analyzed and interpreted on the basis of internal data.”[62] The assumption that made his interpretation persuasive, as Movius had noted, was that Paleolithic Sapiens were as intelligent as we are—for they made the notations and we deciphered them. The structural relationship between the engraving of notations and the external and observed changes of the lunar world ensured that his interpretation was plausible and that it was not arbitrary and subjective.

Marshack ended this “introductory monograph” with a brief discussion of a few late Magdalenian examples that would serve as the basis for a work on the Upper Paleolithic cultures of eastern and western Europe: “The examples presented here only provide an outline of the complex problems that are encountered in the second phase of research.”[63] He referred to several pieces, some of which contained engravings of animals, often without notations of any kind, which made them extremely difficult to interpret because they were so clearly symbolic. “The complete analysis of engraved compositions that are at the same time notations, representations [*figurations*], and symbols is very complex and will be the subject-matter of subsequent publications.”[64] His concluding words outlined an additional research agenda: “The full tradition of symbol usage, of which the notations were a part, seems to imply that there was a periodicity and recurrence of many aspects of the practical and cultural life of the Upper Paleolithic hunter. These periodicities were recognized, symbolized in diverse ways, and probably ritualized.”[65]

The reception accorded Marshack’s first major publication was a preview of things to come—as was his response to it. For instance, Andrée Rosenfeld, then at the British Museum, reviewed *Notation dans les Gravures du Paléolithique Supérieur* in *Antiquity*, a

scholarly and general archaeological journal that had been published in the UK since 1927.[66] Rosenfeld cautiously summarized Marshack's "theory" as arguing that "some of the non-representational art on Upper Paleolithic mobiliary objects represents a system of notation which can be interpreted in terms of a lunar calendar." She did not directly assess the coherence or plausibility of Marshack's argument, but noted instead that "despite the imposing list of museums whose collections have been studied," referring to the sixty-seven museums listed by Marshack where he examined Upper Paleolithic and Mesolithic objects, "to date,"[67] it "is disappointing to find" that the argument "is based on the extensive analysis of six selected objects," all from Saint-Germain-en-Laye (most of which were from the same display case) and the brief analysis of a few other objects. Her disappointment was not diminished by Marshack's written assurance that such a system of notation was widespread.

Nor was Rosenfeld persuaded by the evidence brought into view by Marshack's method of microscopic examination. For example, Marshack "prefers to see" two or three closely spaced lines as deliberate, but they might have been made because "the 'artist' found it necessary to move his tool up and down a number of times to produce the required depth or width to his mark," thus only accidentally leaving two or three lines: "This problem of procedure is not discussed when the additional lines are so fine that they become visible *only* under magnification (p. 64) and their intentional nature may thus reasonably be questioned."

A second problem "is how to decide on the 'starting point' of the sequence," especially when the marks are complex (crosses, zigzags, lambdas, etc.). Rosenfeld was not persuaded that these complex marks were distinguished from simple lines and dots merely "as a matter of style," as Marshack had said.

Third, Rosenfeld argued that "any series of marks" could be grouped according to their cross section and kinetic properties, but the problem was to determine whether the "sequences" form "some identifiable pattern or whether their arrangement is merely haphazard." As we have seen, Marshack "proposes to test this with a model of the lunar month," but his reasons for doing so "are not clear, except presumably that the author is satisfied with the fit." Nevertheless, Rosenfeld agreed that Upper Paleolithic peoples were aware of lunar and seasonal cycles, but "why they should choose the short term fluctuations of the moon to measure the seasonal change in climate fauna is less obvious."

Fourth, Rosenfeld took issue with Marshack's "lack of method" more broadly, which we noted above in terms of his inductive approach to data. She was critical or even dismissive of his statement that an observed month might vary "from 27 to 33 days depending on the choice of starting and finishing points." As a result, she said, "it becomes increasingly difficult to find any consistency in the manner in which the analyzed groupings may be matched to the lunar model." Accordingly, "one is forced to conclude that the few examples of Paleolithic mobiliary art described in this book furnish little evidence of any form of systematic notation."

Rosenfeld's dismissal of Marshack's "immensely flexible lunar model," because it meant "that *any* irregular sequence of numbers could be read as a lunar calendar," was pretty much complete. Her last few sentences provided an account of her own assumptions, which, one may say, were those of conventional archaeology at the time: "That Upper Paleolithic man should have been interested in the seasons is a very reasonable supposition. That he should have been aware of the motions of certain astronomical bodies is not beyond the possible. However, any Paleolithic interest in astronomy—let alone its use for calendric purposes—remains to be demonstrated." In other words, and left unsaid, was the conventional view that Upper Paleolithic human beings were too stupid to have mapped the cycles of the heavenly bodies. For example, when Rosenfeld wondered why Upper Paleolithic people chose the short-term lunar cycles to measure seasonal changes, she actually raised an interesting issue: perhaps the notations studied by Marshack might *also* have recorded seasonal celestial cycles. But to conventional archaeology circa 1970, the notion that Upper Paleolithic humans might, like their Neolithic successors, be interested, say, in seasonal cycles of celestial constellations, was simply not to be entertained.[68]

Marshack replied to Rosenfeld's review in the next issue of *Antiquity*.[69] He began by reiterating his thesis, that notation can be documented by microscopic analysis and Upper Paleolithic engraved mobiliary materials, and that, once documented, it can be tested for possible lunar periodicities. One assumes, he said, that a reviewer would have knowledge of six categories of evidence before presuming to discuss the material contained in *Notation*. Knowledge of the following:

1. *The engraved mobiliary materials*. Here, Marshack wrote, "there is no indication of analytic familiarity with this class of artifact." Moreover, when Rosenfeld recently wrote about Magdalenian stone tools,[70] she was "grossly in error" regarding the presence of ochre on bone artifacts such as the Lartet plaque, which Marshack had discussed.

2. *Notational and mnemonic systems among preliterate people*. Here Rosenfeld simply was silent, which to Marshack indicated she knew nothing about, for example, calendars from the Nicobar Islands, which "are engraved *exactly* like the Upper Paleolithic notations," thus lending ethnographic support from "primitive" contemporary people to Marshack's argument.

3. *Lunar observations among preliterate peoples*. Rosenfeld's lack of familiarity with the ethnological data that document the use of the moon "to measure seasonal changes" is the reason why she was "perplexed" by Marshack's discovery that Upper Paleolithic people did the same.

4. *The nature of the lunar period*. Her consideration that "any irregular sequence of numbers" could be read as a lunar calendar is simply refuted by the evidence: "The lunar phases and sequences are invariant" and, despite the absence of an occasional observation, "constituted a basic, self-regulatory periodicity" as a matter of simple observation. Added to her basic unfamiliarity with the evidence as shown in the first three points, Rosenfeld was also untrained: "Clearly Rosenfeld is unprepared to deal with the arithmetical, mathematical, statistical, astronomical, and probabilistic factors involved in the analysis and theory of such notation."

5. *The nature of the evidence*. Even where the evidence in the form of marks was "clear, large, separate, regularly spaced," and so on, as with the Blanchard plaque, Marshack asked, "Can she recognize notation?" He added that, having presented the evidence to specialists in anthropology, ethnology, semantics, and other fields, "almost without exception it was agreed that the sequence was notational." So the only serious question was, How do *you*, Rosenfeld, interpret the notation? The question of whether the marks constitute a notation had effectively been answered.

6. *Sequential microscopy as applied to engraved bone*. According to Marshack, Rosenfeld confused his use of microscopy with analysis. The analysis *used* the microscopic

> data but only as the basis for argument regarding sequences of scratches and lines, different degrees of polish and so on. "This is no large analytic problem. It is the miniaturization of markings that particularly disturbs Rosenfeld who italicized 'they become visible *only* under magnification.'" Marshack said, in effect: so what? Miniaturization, like notational marks, was a fact: "It is one of the unexpected findings of the method," and, very simply, "must henceforth be considered in discussions of Upper Paleolithic engraving."

Let us summarize this dispute: in Round One, Rosenfeld said that Marshack's "theory" was arbitrary. It relied on too few sources of data despite his claim to have examined many more artifacts. Microscopy added nothing worthwhile to naked-eye analysis except that it allowed the analyst to "prefer" one set of scratches to another and choose the ones that supported his "theory," thus adding to the arbitrariness of Marshack's approach. Maybe the sequences represented a lunar month, but maybe not. In short, whatever Marshack was doing, it wasn't science.

Round Two was shorter: Marshack concluded (four times) that Rosenfeld was an ignoramus. Once he said she was simply untrained and wouldn't know a lunar sequence if it sat in front of her nose. Once he indicated she was simply too unimaginative to understand what he was doing.

To this unedifying example of the nonmeeting of minds (and of distinct British and American styles of disagreement), the editors of *Antiquity* gave Rosenfeld an opportunity to respond to Marshack's remarks. "It was with some surprise that I read Marshack's comments on my review" of *Notation*, she began with apparent ingenuousness. To begin with, Marshack's discussion of the significance of ochre was not mentioned in the book. This is true, but Marshack mentioned ochre in his response only to suggest that Rosenfeld did not have a strong grasp of the evidence when, in a publication (where Marshack also appeared), she said there was no "direct evidence for the colouring of bone objects with ochre" when there was such evidence and it had been uncovered by Marshack's microscopy.

Nor was there any discussion in *Notation* of ethnographic data. "Indeed," she said, "it is one of the great weaknesses of the book" that such matters were omitted. Besides, not every preliterate contemporary society used a lunar calendar, and, even if some did, this was not sufficient reason to think that lunar

calendars were also Paleolithic. Marshack thus failed "to consider any other possible interpretations of the archaeological record." Of course, Rosenfeld did not suggest any alternative interpretations either.

She did allow, in a backhanded fashion, that Marshack "raises one relevant question," the problem of "markings which are invisible to the naked eye." Such an invisible scratch was not a "record" of any kind. However, "as Marshack *now* states," if these marks were merely finer or smaller than scratches visible to the naked eye, then their differentiation from visible markings would still need to be explained. Marshack tried to do so in his analysis of the Polesini engravings, "but there also, all likely alternative explanations are ignored instead of discussed." Again to state the obvious, Rosenfeld failed to suggest what any "likely alternative explanations" might be. On this exchange, Movius wrote to Marshack: "I wouldn't worry at all about the Rosenfeld review. That was by no means cataclysmic. She just simply did not do her homework and should be soundly spanked and sent home from school. In other words, it seems to me that the aftermath of her silly review will catch up with her in the end."[71]

In September 1968, Marshack delivered a paper at the first Valcamonica Symposium, an annual meeting of scholars that continues to the present day. The petroglyphs of the Camonica valley in Italy had long been studied by archaeologists; in 1966, Emmanuel Anati founded the Centro Camuno di Studi Preistorici to study the Valcamonica petroglyphs and organized the first symposium two years later. This was Marshack's first opportunity to discuss the arguments that eventually appeared in *Notation* before an audience of experts.

He discussed a microscopic examination he had made of an amber figurine of a bear from Denmark. The photographic enlargements revealed that it had been worn and polished but to different degrees. Some parts of the bear were unpolished, others so worn that the original hatched pattern was scarcely visible: "It was clear that, whatever the precise meaning of the bear, it had been sculpted for some 'storied' purpose. Afterward it had been kept and handled for a relatively long time."[72] Microscopic examination of all the engraved marks on the bear enabled Marshack to determine the sequence and the configuration of the cutting points making the marks, including the sequence when the scratches crossed each other. "This made it possible to test the groups sequentially for any periodicity" and to determine the

range of styles used. The point of determining the sequence of the engraving and whether one particular scratch had been overengraved at a later date indicated that the artifact was used over a long period of time and thus, in Marshack's language, was "storied" in the sense that whatever its purpose (such as for use in a ritual of some sort or marking a lunar sequence) that purpose could be described in a narrative. Moreover, statistical analysis of the microscopically obtained data indicated that the story was "a sequential composition which, with a high degree of probability, seemed to indicate lunar phrasing." Marshack performed a similar analysis on a stone slate and an amber pendant, and he concluded that "the probable sequential order of their marking reveals a close lunar phrasing. . . . Our intent has been to show that a tradition of notation in the Mesolithic can be documented by a new methodology and technology and that there was a 'time-factored' use of the mobiliary artifacts, whether the artifacts were art as in the amber bear or non-representational as on the pendant or stone slate."[73] Whatever the precise meaning of the pattern of notations, about which Marshack did not speculate, he did show that his approach provided a new interpretation of these very old materials and that there existed "the possibility of relating some of the insights gained from the mobiliary materials to the contemporary parietal renderings."[74]

Two days later, Marshack wrote Movius about his first experience delivering a paper before specialists: "I was put in the last session, Saturday morning, devoted to topics of general interest, among 'amateurs' and philosophers of art and religion such as Marie König." She and Herbert Kühn had delivered "philosophical, romantic interpretations" characteristic "of the old school." In contrast, the response to Marshack's paper was quite unexpected: "The reaction was electric. I think the symposium, including Anati, was stunned."[75] Movius replied by congratulating Marshack and later cautioned him about Kühn; he said nothing about König.[76]

Marshack published two articles in 1969. It is not clear when he wrote them. The first was a report on his microscopic examination of Italian artifacts.[77] He noted that not only did he use a stereoscopic zoom microscope with a magnification range from 10x to 60x, but that the report was the result of five years' work, which meant it also presented the results of his library work on the published secondary materials. For the first time he drew out some of the implications of his new technique.

Most of the Italian artifacts had been analyzed previously in light of the categories developed by Abbé Henri Breuil on the basis of his work on the style of the Franco-Cantabrian and eastern Spanish traditions. Marshack proposed looking at the Italian mobiliary art on its own and without reference to Breuil's concern with hunting tallies and magic (220–21). By "hunting magic," Marshack meant the use of an animal image that would be engraved to represent "a ritual of ceremonial killing *to assure success in the hunt* with the implication that the hunt is for food" (236; see also 226). Such discussions, he said, "entailed neither a precise methodological analysis of the materials nor an adequate definition of the concepts that were conjectured" (221). They were simply analogies developed on the basis of observation of modern primitive societies.

The Polesini materials included several examples of the "killing" of animals and of "weaponry." The question Marshack asked was whether microscopic analysis confirmed the interpretation given similar images in the decorated caves farther west. The first thing he discovered with the Italian mobiliary art was that a horse image had been reused or renewed: "Apparently it was the *concept* of 'HORSE,' rather than the particular drawings of a particular horse, that was involved in what seemed to be 'killings.'" A similar practice occurred in the cave art, but there it was "difficult to determine if these additions were made within a limited period or even by the same culture." With the Polesini materials, the time scale of engraving on a single bone was necessarily limited. For instance, an old and dried-out bone could not easily be engraved. Moreover, for the same reason, the culture involved (and perhaps even the individual doing the engraving) must be the same. That is, two variables in the cave art were controlled in the Polesini artifact.

His first conclusion, therefore, was that, for example, the reuse of a horse image by overengraving indicated that it had a ritual use and was not just a single image used to ensure a successful hunt. Thus the image "was never fully 'killed' [as the hunting-magic theory required] and must represent, symbolically and mythologically, something more than food. It is a sign and symbol with a meaning, duration and constancy that indicated it was to some extent mythologized" (226). A corollary was that the "renewal" achieved by overengraving was an index of an act of participation in the generalized symbol "HORSE." From this analysis Marshack drew two conclusions regarding the cognitive

capacities of those who made and used the Polesini art: (1) a bone, a stone, or a cave wall "can serve as a slate or a surface for the accumulation of renewal of symbolic images," and (2) "these images maintain a continuity of meaning in time" in the sense that the meaning did not end with the alleged magical "killing." Thus the mobiliary art was not a "sketchbook" for the more meaningful parietal art so much as "one aspect of a comprehensive system of symbol usage that also applied to the wall art" (230).

Cognitively, the accumulation of images "approaches 'notation' since the slate is kept and the additions tell a 'story' or make a 'sum.'" And these additive symbols could lead to the development toward new meaningful forms of symbol not limited to hunting magic. That is, the notations were open-ended in their ability to tell a "story." Moreover, the style of cumulative marking on a slate occurred from Aurignacian times to the end of the Upper Paleolithic in the Magdalenian and was not confined to representations of animals and images (231, 234). Marshack rejected the hunting magic theory, therefore, because the theory was too simple to account for such a complex composition.

Specifically, the hunting magic theory was wrong because "both the animal and the dart had become symbols and . . . the relation between them had assumed the aspect of a language of signs in which the animal *and the dart* were 'storied' and the 'killing' was mythological." Marshack pushed this analysis even further by arguing that "the dart as symbol or sign had assumed significance *apart from any species of animal* supposedly intended to be killed" (244). The implication was that the "killings" might also represent a sacrifice, a healing rite, seasonal rite, initiation rite, or a pregnancy rite because they were repetitive and thus time-factored, and because the constancy of the imagery indicated that what was renewed was not a constant desire for meat but the story of the animal (250).

Moreover, the argument also applied to the darts used to "kill" the animal. With the more abstract renderings of animals, the focus was on the dart, which suggested a second general interpretation: the darts or the "dart story" or "dart symbolism" could be used "in conjunction with animals and also, meaningfully, alone" (260). That is, although the symbolism of the dart or weapon by itself had been noted as a possibility in the cave art, "the difficulty of establishing simultaneity or a chronology has made the interpretation uncertain." With the

Polesini materials under the microscope, simultaneity can be established, thus raising the question as to the meaning of "the *group* or 'set' of darts *as a unit* with a possible group symbolic meaning." In short, the "set" of darts may represent a "scene" such that the animal implicitly involved, if there were one, need not be represented. Perhaps there was a "ceremony of the dart" rather than of the hunt (267).

Marshack was later accused of being overconfident in his interpretation, so an example of what, in fact, he was doing might be useful. Here is one description of a microphotograph, which was reproduced in the article:

> There is one flat fragment of bone that has *two* "sets" of feathered darts, each set made by a different point and at a different angle. Each dart in the set of five darts at the right has the engraved serpentine markings on the feathers clear to the eye. However, the set of six fragmented darts at the left has these serpentine markings visible only when we examine them by microscope. Despite the fact that each set is composed of the same sort of darts, we have a clear group concept. The differences in the points doing the engraving validate this "set" concept. In addition, the microscope shows that some of the darts in the set at the right do not touch the top edge, and others do not touch the bottom edge, so this group seems to have been self-contained within this general area. The group to the left also does not cross over the bottom edge; however, these darts do cross over the earlier, long single line which is engraved at an angle, and this long line may therefore represent a generalized animal back. These two sets of feathered darts were then crossed over by extremely schematized darts made at a right angle. The line rendition reveals the obvious primacy of the dart image over the animal image and again indicated a concept of the *set* as opposed to or used with a single dart (268).

If this rather detailed interpretation is plausible, the weapon might also be symbolized as being meaningful in contexts other than hunting, "such as healing, trance, dance, sacrifice, initiation, and propitiation." That is, both the darts and the animals may have been "storied" and to some extent may have been separately storied.

A further implication Marshack drew was that, even though "both the dart and the animal as symbols had a mythological and cultural constancy," the precise images might vary in terms of style or degree of realism or abstraction. Indeed, the variability of

images “suggests that, despite ‘style,’ the concept was a cognitive aspect of a well-known symbolic tradition” (270). In contemporary interpretive language, Marshack argued that the same image or artifact could express a wide range of meanings that may only be distinguished at a later period. Such images are polysemous or polyvalent, and typical of compact experience.

Marshack drew two conclusions. The first appeared to be rather modest. His purpose, he said, was neither to confirm nor deny the hunting magic theory so much as to indicate that alternative interpretations were possible. And yet, his microscopic analysis indicated that the same sequence of engraved images could serve several distinct cultural purposes. It is conceivable that one such cultural purpose may indeed have been hunting magic, though Marshack provided plenty of evidence that this was improbable. Besides, the hunting magic theory claimed to be exclusive, so that any polysemous interpretation such as Marshack advanced was necessarily a denial of the validity of the hunting magic theory. In short, the implications of Marshack’s innovation had an unavoidable critical or even polemical dimension so far as conventional and received accounts were concerned. As Movius had earlier told him, archaeologists do not easily welcome or even accept novel approaches and interpretations, particularly when made by “outsiders.” Nevertheless, that is often how science improves.

The second conclusion seemed more ambitious but in fact was a reiteration of a remark he made on the basis of the IGY research: he rejected the notion of “suddenness” in history, including paleohistory. In light of later agricultural religion, symbolism, and writing, “the significant fact” that his study had uncovered was “that Upper Paleolithic man had begun to use and keep a single slate to accommodate and accumulate a series and sequence of related symbolic images, whose meaning has a constancy and whose use was periodic.” Thus the cognitive tradition, not the precise meaning of any specific factor, was what he considered to be his most important discovery. Its importance, moreover, consisted in its having a “potential for development and for increasing specialization” (272). As we shall see in chapter 4, this insight turned into a constant theme in his work.

A second article written in 1969 provided further published microscopic analysis of additional artifacts, this time showing that the Lartet “knife” was not a knife since it showed no

evidence of use in cutting. The microscope also revealed that a slate in Saint-Germain-en-Laye had been ochred after it had been engraved, which "perhaps indicates that the bone had a symbolic or narrative content beyond that which would normally apply to a daily utilitarian object."[78]

A year later Marshack published a paper describing his microscopic analysis of the *bâton de commandement* of Montgaudier.[79] The baton, an engraved reindeer antler, had hardly ever been seen, having been tucked away in a dimly lit cabinet at Saint-Germain-en-Laye and was best known by the publication of Breuil's line drawings of fish and seals on it. For paleoscientists, there was already an interesting problem: the seals were realistic, but Montgaudier was a hundred miles from the Atlantic. Where did the artist see the seals? Did they come up the nearby river or did he (or she) visit the coast, which during the Late Magdalenian was even farther away? To consider these and other questions, in 1967 Marshack first removed the protective wax from the baton and put it under the microscope. This enabled him first to correct several of Breuil's misinterpretations. What Breuil thought was a mackerel with its mouth closed was a male salmon with a kipe, an extension of the lower jaw that develops during fall spawning season. What looked to the naked eye (and to Breuil even with a low-power magnifying glass) to be a nondescript blob was revealed to be a "spring sprout" by the microscope. Another was the head of an ibex with an "X" on its brow "as though it had been symbolically marked or crossed out after it had been made." A second "extremely schematized" ibex head was scratched near the first. Three forms, which were called "barbed weapons" by Breuil, were also near the ibex and salmon, and they turned out to be "carefully drawn plants," not darts or harpoons.

On the reverse face of the baton were two intertwined serpentine images and some small forms, one of which had previously been called an "insect," and that Breuil had drawn as a medallion. Under the microscope it turned out to be a flower in full bloom. So Marshack found three plant images, each of which was seasonal—from spring sprouts to mature flowers. This raised for him this question: "Why had the hunter been interested?" What was the story that the development of a plant had for a hunter?

Turning then to the major engraved image, that of the seals, Marshack discovered that they were not two species, as had been

thought, but a full grown male and either a female or a young animal. This image was also seasonal, whether the smaller animal was a female or a seal pup, because bulls collect harems and the young were born and learn to swim in the fall. Likewise, the serpentine images, which Breuil considered to be eels, were also seasonal: they were of grass snakes that appear in the spring. "What we have, then," wrote Marshack, "is a composition in which diverse species from separate realms (ocean, river, ground and mountain) are differentiated according to their season of appearance, sex, and stage of maturation." Marshack initially speculated in the English version that all the engravings were related to spring and summer but the French version corrected that interpretation since the ibex were not seasonal and the salmon spawned and the seals whelped and mated in the fall.[80]

Despite correcting previous errors regarding the details of the images, Marshack's microscopic analysis was also insightful in correcting previous interpretations. He added two additional remarks that proved to be significant for his later work. The first was that analysis of mobiliary art may provide clues for the significance of the cave art (he raised this as a question in the English version and as a conclusion in the French). Second, Marshack again agreed that the development of technocomplexes was important (so important that we still refer to various periods in terms of the tools used by humans living during the periods when they were used). He also acknowledged that many archaeologists consider "the art of these early men [to be] subsidiary" to tool use. But he also insisted on the fact that the Upper Paleolithic "was also the first age in which there appeared a complex human art and symbol." The new information revealed by microscopic analysis suggested "that the development of this intellectual symbolizing skill was, perhaps, more important in the eventual development of civilization than were tools."[81]

One thing we may conclude with confidence: Marshack's use of microscopy would lead to a lot of archaeological rethinking, and not just about lunar notations. His discussion of the Polesini horse, for example, indicated that it was used as part of an activity, which we conventionally call ritual, that took place over a long period of time. It was polished by use, even by human handling, and so was not an instance of a one-time hunting magic artifact. Likewise, the amber bear discussed at the Valcamonica Symposium was "symbolic art" and a vehicle for notation. That Marshack was open to criticism was obvious. His inductive

approach to the materials led him to criticize his detractors because they didn't have his familiarity with a microscopic examination of the artifacts. But then, only he did. And the real conflict was between his inductive collection of evidence and what is loosely called the hypothetico-deductive approach of conventional or "normal" archaeological science. In the case of Upper Paleolithic mobiliary artifacts, the absence of hypotheses regarding the meaning of the materials, their "semantic content" as he later called it, led time and again to archaeologists' insistence that "we don't know what it means" often because "we can't know what it means." And to ensure matters remain in a state of ignorance, the implication was that we *never* will know what these mobiliary artifacts—let alone parietal art—meant. Marshack challenged this doctrinal insistence on never being able to know what Upper Paleolithic art meant. It is hardly surprising that his critics disagreed or that Marshack responded to them with impatience and aggressive rhetoric. Rosenfeld was merely the first to be "surprised," which is to say, offended, by Marshack's lack of British academic gentility. Even though Marshack was aware of the limitations of induction, as is evident from his correspondence with Movius, he never said so in public.

From Notation to Story

We have already quoted from, and referred to, Marshack's major English publication, *The Roots of Civilization*. As with the author's complex and inductive argument, this was a multifaceted publication. It was beautifully illustrated, but the photographs were not just of the famous parietal art of the caves. Marshack also reproduced many microscopic photographs that were beautiful in the way that X-ray images may be beautiful to a radiologist. *The Roots of Civilization* was the result of nearly a decade of work, and it both summed up the insights he had accumulated and set the stage for subsequent work. In this respect it was a book much like *Notation*, which concluded with the observation that the discussions of the artifacts presented in the monograph "only provide an outline of the complex of problems that are encountered in the second phase of the research."[82]

Before considering the "second phase" of Marshack's work, let us consider what he achieved in *Roots*. There were, as usual, delays in publication, and when it finally appeared, on February

12, 1972, his publisher, McGraw-Hill, was under a very dark cloud. They had agreed to publish in March of that year an autobiography of Howard Hughes, which, in January, Clifford Irving and his wife confessed to having made up. When *Roots* appeared two weeks after the Irving admission, McGraw-Hill was still on the defensive and greatly reduced their efforts at publicizing the book.

In a reply to a review published in 1974, Marshack provided his own clarification of "the special circumstances under which the research was begun and the book was published," some of which was discussed in the first part of this chapter. An initial manuscript was completed in 1968 and delivered to the publisher. It was not what they had expected, given that the contract called for "a medium-priced popular book with a minimum of illustrations." But the initial European research changed all that by enabling Marshack to develop "the methodology, technology, and series of unfolding questions that somehow burgeoned into an exceedingly complex subdiscipline of archaeology."[83] Between 1964 and 1968, the original manuscript was rewritten "on the run, on planes and in hotel rooms." After the research for one chapter was written up, it led to new questions and new investigations "of dispersed materials that had not until then been studied methodologically." As a consequence, *Roots* "became the diary of an inquiry, an enlargement of the 'working' field notes, a record of the sequence of questions, generalizations, heuristic models and evaluations of current theory that were formulated and tested as the research and writing proceeded." That is, *Roots* was the record of Marshack's *zetema*, his search, but it was not always clear what he was looking for.

Hence, his inductive accumulation of insights was followed by what he called "the tale of a deduction, the story of the making of a skill."[84] Or, as he said in 1974, *Roots* was "the record of the education of the researcher and, in the process, a voyage of education and exploration for the reader." It was, moreover, "exciting," and during the prepublication period the manuscript was constantly being corrected. Marshack then provided his own critique of *Roots*, which combined the story of the composition of the book, the story within the book, and an indication of the next phase of his work. *Roots* began, he said by way of summary, as an inquiry into the possibility of notation in the Upper Paleolithic, which Movius initially had denied. "It developed into a study of

the many complex symbol systems of early man." Had he written it after a decade of research "it would begin not with the notations, but with a discussion of the biological and neurophysiological bases of evolving hominid cognition and symbol usage, an inquiry not usual in the study of archaeological artifacts or artifact traditions."[85]

Marshack had, in other words, even before *Roots* was published, begun the next phase of his work. The search for the "cognitive beginnings" of the earliest art, symbol, and notation, which was announced as the subtitle of his book, had already suggested to him "that hominid cognitive and symbolic strategies were often non-conscious and non-linguistic, occurring simultaneously at a number of neurophysiological levels." Moreover, the later work indicated *several* Upper Paleolithic notational systems, each with its own semantics. It also uncovered evidence of nonnotational and nonimagistic symbol-making as early as the Mousterian and Acheulian. The Upper Paleolithic animal and female images were more complex in terms of use and meaning than was indicated in *Roots*, and a large number of images and symbols were not considered.[86] Even in *Roots*, Marshack referred to "a series of monographs and papers" that "have been prepared for archaeological and anthropological journals," in which the problems, methodology, and findings were presented within a more rigorous framework.[87]

Indeed, by 1969, before either *Notation* or *Roots* was near completion, Marshack said he had taken 8,000 photographs "and could conceivably do a paper on each of the hundreds of pieces I've examined. One stage of the research, then, is done." He had maintained a hectic travel and research schedule and had several times fallen ill from exhaustion. As he wrote to Movius in the spring of 1969 when he thought *Roots* was in production (in fact, his revisions meant that it would take another couple of years to appear): "In one sense, then, I have completed what I set out to do five years ago and am emotionally depleted."[88] He immediately added that his next book was to update *Notation*: "I feel close to an understanding of a major part of all Upper Paleolithic 'art' and 'symbolism' with the microscopic methodology working across the board." In the event, he turned to *Notation* and made several revisions, which in turn found their way into *Roots*. In the spring of 1970, Marshack wrote to Movius: "One way or another, I have enough research plans to keep me busy for many years and more writing than I can ever complete. I

have not had a solid week of vacation in these six years."[89]

One of the major achievements of *Roots*, then, was to set out systematically and in detail Marshack's account of notation and its confirmation by lunar calendrics. Marshack also reflected on the importance of the story and of "storied symbolization." Even though he did not always later adhere to his own insight regarding the significance of the story, it seems to me that this was his most important discovery so far as political science is concerned.

Marshack was not led to his understanding of stories and of storytelling on the basis of a theoretical or philosophical argument. Rather, in keeping with his inductive approach to the materials, he gradually gained a new perspective on his own discoveries. In chapter 7 of *Roots*, "Time-Factored Thought," Marshack began by discussing the limitation of understanding humans in terms of their toolmaking abilities. "If," he said, "we consider man during his evolution or hominization as basically a toolmaker, then it is relatively easy to trace a line of development in this toolmaking ability through the biological fossil artifacts."[90] Marshack, however, argued that tools were but one aspect of "a wider, cognitive, cultural evolution."

He considered the implications of the control of fire, which, he said, hominins have been able to do for over half a million years: "The demands of a fire culture are strict." The lore might vary among different cultures, but all would have to learn that, for instance, wet wood burned less well than dry, green grass less well than brown, and so on. More important, Marshack argued,

> fire is "alive." It must be tended; it needs a home and a place out of the great winds, the heavy rains, the deep snows; it must be constantly fed; it sleeps in embers and can die, yet it can also be blown back to life by the breath; it can burn a hand; it sputters angrily and brightly with animal fat; it dies entirely in water; it whispers, hisses, or crackles, and therefore has a variable "voice"; it uses itself up, transforming a large weight of wood to gray ash, while climbing by smoke and savor to the sky, at last disappearing in the wind; one can carry its spirit of "life" on a burning branch or ember to make a second fire. To a man with fire, then, there is a continuous involvement in a complex, dynamic process which creates its varying, yet "artificial," demands, relations, comparisons, recognitions, and images.

Moreover, the constant requirements of tending fire "tie one down in time and thought."[91]

Equally significant, a culture of fire assumed if not language then a capacity to communicate sufficient to maintain the fire. More generally, "the specific ability to create and maintain a continuous, dynamic, changing, and increasingly complex, time-factored, artificial culture is human." Marshack immediately attributed this entire process to the evolution of the brain. More important than this nod to biological reductionism, Marshack noted that when humans existed in such a way that was implied by a fire culture, their existence was already storied in the minimal sense that, for example, they could explain to one another how to keep a fire going or where to look for deer tomorrow. Moreover, the campfire itself provided a venue for additional cultural changes: listening to music, for example, or dancing in time with music, sharing meals together, telling stories, meditation, or just staring at the flames, all would involve language and perhaps ritual. Marshack's story of stories was straightforward: "The evolution of the broader, time-factored and time-factoring capacity, including the skill of toolmaking and language . . . leads eventually to the notations and art." This insight, Marshack said, allowed him to proceed with his research and hinted at the reasons that made his research possible: since notations and art were part of human kinesthetic and cognitive capability, "and since this capacity was broader than that involved in a specific toolmaking skill or in the physiological skills required for the articulation of one language, I could, with a comparable cognitive capacity, try to re-create some of the specific uses."[92]

That is, Marshack's story of stories demanded that he use his imagination to make sense of the data he had observed—to see observed phenomena as notations, for example. The "generalized capacity" that enabled him to do so was the same capacity, he argued, that enabled early hominins to invent tools, words, and stories. And by "story" he meant "the communication of an event or process," such as fire-tending, but also other time-factored experiences from memories of past activities and places to projections of future actions, specializations, seasonality, and so on.

As with his discussion of mobiliary art, his purpose was not to explain what a particular piece meant but to indicate that, whatever it meant, it was a storied meaning. So, for example, he argued that when Sapiens left Africa for the rest of the Old World, their tools, food, morphology and probably group

relations and stories changed. What did not were the cosmic rhythms: sun, moon, stars, seasons, birth and death. To explain or account for such rhythms, Marshack said, Sapiens told stories that made sense of observed changes and allowed them imaginatively to "participate" in the stories and thus in the changes the stories evoked. Thus the lunar calendric notations were now described as "remembering marks" of a lunar story: "A painted or engraved composition, even when not realistic or figurative, often had a complex storied meaning."[93] Looking at the earliest notations and comparing them to later ones, Marshack saw a time-factored, storied meaning involving, for example, seasonal rhythms that he could understand and then he could comprehend how later expressions of seasonal periodicity developed from the earlier.

This interpretive strategy did not mean Marshack could "read" the images and marks of any particular artifact—a so-called *bâton de commandement*, for example. However, in looking at the artifact "an extraordinarily complex composition has begun to seem organized, purposeful, notational, and part of a tradition that composed storied sequences or sums with a repertoire of images. The way of thinking is one we understand."[94] Here he provided more details on the Cueto de la Mina baton. In the winter of 1968, Marshack recalled, he visited the Natural Science Museum in Madrid to examine some Upper Paleolithic materials: "I realized I had stumbled on a unique example, the one composition in all Europe that validated the many hypotheses, theories, conjectures, and findings I had pieced together so laboriously in an analysis of hundreds of other examples." This baton combined engravings of plants, animals, and notational counts. "The forms or images [of ibex or plants], having been separated from the notational groups, it becomes clear that they were intended to serve as symbols in relation to the sums of marks near each. . . . We have on this bone, therefore, the first sure validation of the symbolic use of art and sign in relation to notation." There were a few "uncertainties," Marshack allowed, but even so this baton was (yet another) "Rosetta stone" insofar as the seasonal markings—the ibex as the symbol of spring or the plants as symbols of late summer and fall—verified the lunar notations.[95] As Marshack said later and more commonsensically, "Nobody ever made an image without having a name for that image and a story to go with it."[96]

As with Marshack's earlier remarks, "whether the reading of each symbol is correct or not, what we have here is clearly a

calendric system combining signs and notations in a highly evolved Magdalenian style. The notations indicated the usual lunar sequences; the symbols indicated the association of a particular period with an animal or plant form or stage and perhaps indicated (as it does on later calendars from the Greeks to the Yakuts) the moment for a significant rite, myth, observation, seasonal change, and so on. Marshack found the same association of plants, signs, and animals in the cave imagery, which indicated to him that "to some extent the same basic *stories* and *basic images* would be involved" and associated "with both the caves and the mobiliary artifacts." That is, the cave imagery was also seasonal.[97] In Lascaux, for example, the "Chinese" horses were mares and either pregnant or potentially pregnant and were associated with spring plants.[98] Likewise leafy branches were associated with cows and mares and spring calving and foaling; likewise bare branches were associated with stags, stallions, and bulls, and the fall rut.

Marshack also discussed horse engravings, including the famous Vogelherd horse, their "reuse," overengraving, and handling and polishing, which suggested the horse had a symbolic rather than a nutritional value.[99] Following an extensive and detailed analysis of both cave and mobiliary art, particularly from the late Magdalenian, Marshack concluded:

> The repertoire of images found across the Upper Paleolithic of Europe, therefore, suggests a storied, mythological, time-factored, seasonal, ceremonial and ritual use of animal, fish, bird, plant and serpent images, and it apparently also included at times what seem to have been selective and seasonal killing and sacrifice, either of the image, in rite, or of the real animal. The complexity and interrelation of these storied meanings cannot easily be explained by any generalized theories propounding concepts of hunting magic, fertility ritual, or sexual symbolism. Instead, the art and symbol suggest a broad range of cognitions, cultural and practical, and a profound understanding of processes of nature and of the varieties of living creatures.[100]

Matters grew even more complex as the mixture of art, symbol, rite, and story was expressed in increasingly complex visualizations. "Art and symbol are products that visualize and objectify aspects of a culture and no one image in human art is ever entirely explicable in terms of that representation and the limited meaning of that one image." Even so, Marshack was able

to discern “certain tendencies” emergent from the complex Upper Paleolithic art and notation that constituted an intelligible whole, a structured continuity and periodicity that expressed an important aspect of the cultural life of the Upper Paleolithic hunter, namely, the necessity of integrating human life with the observable cosmic rhythms.[101] These observations were not, Marshack said, abstract speculations. We can be confident that Upper Paleolithic humans made close and accurate observations of animals and “had a sense of the interrelationship of all phenomena” *because* “aspects of his stories and knowledge appear in his art.”[102]

Marshack then illustrated his general insight with reference to female images, the famous “Venuses” of the Upper Paleolithic, and suggested various storied accounts of what they may have meant—not to indicate that his interpretation was “correct” in detail but to show that some such story was an event that “included characters (whether spirit, god, hero, person, mana,’ or, in modern terms, element, particle, force or law) who change and do things in time,” and that humans participated in such stories by engaging their imaginations. For example, an engraved bas-relief on a reindeer bone from Laugerie Basse, near Les Eyzies, showed a pregnant female human prone beneath a bison in an apparent attitude of supplication or prayer (see image 4):

> The attitude of prayer, the subsidiary position of the woman in relation to the animal, the stage of the pregnancy, the realistic decoration she wears, and the relation of this image to other Magdalenian images of men around animals in ceremonial attitudes or positions seem to imply that this is a “real” woman and not a goddess. If this is a representation of a pregnant woman in storied relation to a male animal, then whether it has to do with a prayer for safe delivery or is the depiction of a myth in which the goddess is also involved with the stag or bull is not really important. For the prayer by a real woman, depicted on a composition for “magical” purposes, is the telling of a mythical story in which animal and women are related: these are acts of participation. The precise story details may be different in the myth of the goddess and the ritual of a pregnancy, yet the basic cognitive uses of story would be similar. For this reason, the storied elements in the composition may be seasonal or celestial, depicting the story of a sky god in relation to an earth goddess, and still the composition could *at the same time* represent the participation of a real pregnant woman in supplication or ceremony with a real animal. The details are not important in

> this early stage of interpretation. What is important is that we establish the range and potential of the uses of story and symbol, rite and art, and that we place the evidence in a frame within which analysis and comparison can begin.[103]

With the end of the Pleistocene, a great deal changed in Europe, North Africa, and the Middle East: "Not only did man's way of life in these regions change, but his images and stories also shifted and changed." The art was still time-factored but the skill in rendition had declined. "For one thing, the 25,000 year old tradition of bone use had suffered when the herds died; for another, the social structures and ceremonial life of which the art had been a part had also deteriorated." One is reminded of the effect of the vanishing of the buffalo for North American plains Indians.[104] But not everything changed: "The periodicities of sky and season remained and the processes of the human group remained as well." And so did human cognitive abilities, the tradition of notation and symbol-making, lunar and solar observation, and the observation of natural periodicities, rhythms, and habits: "Man retained the ability to function in a complex, time-factored reality by use of symbol and the equations of story."[105] Human beings did so, moreover, aware that they were "minority creature[s] in the world of nature."[106] In the decades following the publication of *The Roots of Civilization*, Marshack continued to publish his analyses of specific artifacts but, as has been indicated in the foregoing discussion, he also reflected on larger questions of human cultural change. These problems are discussed in chapter 4.

CHAPTER 4

Marshack and Very Early Symbolization

New Problems

The arguments in Marshack's *Notation dans les Gravures du Paléolithique Supérieur* and in *The Roots of Civilization* aimed, among other things, to secure as a basic fact that the markings on various mobiliary artifacts constituted notations, many of which were lunar, some of which were seasonal. In terms of the problems described in chapter 1, Marshack's work on lunar and other calendrics indicated that the reality of cosmic order was present within Upper Paleolithic consciousness and probably present in very early Paleolithic human experiences. Moreover, this consciousness was participatory and included emotions in addition to being cognitive and perceptive. This was what he meant by arguing that Upper Paleolithic art referred to "storied" frames of reference. That is, the imagery indicated that humans participated imaginatively in stories expressed in the art, though the details of what the stories may have said would remain speculative. Marshack also indicated (and in this chapter we will consider his supporting argument) that such notations were symbolic and that symbolism documented changes in cognitive capacity. Finally, he argued that specific evolutionary conditions made it possible for humans to develop the capacity to symbolize, and a number of times he stressed that these problems were fundamental in archaeology and paleoanthropology. Not surprisingly, his arguments regarding the fundamental issues

were not always accepted by the scientific community.

For example, at the end of December 1970, Marshack submitted "Cognitive Aspects of Upper Paleolithic Engraving" to *Current Anthropology*, which has been cited several times in this book. The journal was founded in 1959 by Sol Tax, an anthropologist at the University of Chicago. For a nonspecialist, *Current Anthropology* was interesting for two reasons. First, it published research across all anthropology subdisciplines, from primatology to analysis of the forensic anthropology TV show *Bones*. Second, it was one of the first scholarly journals not only to publish new research and methods, but also the responses by specialist peers to the original article, which remarks were then followed by the author's reply to critics and commentators. It often makes for exciting reading. Marshack's sixteen-page paper was followed by nine pages of critical discussion and his five-page response to it.[1] We consider Marshack's arguments in the following section.

One commentator, Mary Aiken Littauer, raised an obvious and commonsensical objection to his entire approach. If Marshack needed a microscope to analyze markings on bones, for example, "how did Upper Paleolithic man read them?" Indeed, she said, "without measuring for himself, the reader may not realize how small these markings are." Marshack later referred to the "tiny marks" on the bones, but he did not consider size to be a serious problem.[2] Differentiating the marks by means of a microscope was an "analytical problem" for contemporary scholars. "It did not exist for the engraver. The engraver had cognitive, kinesthetic, and sequential inputs derived from the process of engraving and cultural inputs derived from the contemporary engraving tradition. He, therefore, 'read' his marking as part of a known *system*."[3] The engraver, in other words, knew what he was doing, even if we do not.

Our problem, therefore, was to determine (1) what the sets were, and (2) the system within which they were made, which Marshack broke into three constituent elements: (a) the *syntax*, or cognitive strategy according to which the engraved marks were made; (b) the *semantics*, or possible meanings they may express; and (c) the *pragmatics*, or use(s) that the markings may serve.[4] Some of the data can be obtained today only microscopically, perhaps because of scale or because of the deterioration of an artifact, but also because "we often see and seek out what we are trained to see and seek, but as important, we often do not see

what we are not trained to see." We may find it difficult to accept "such incredibly small marking," yet "an intentional nondecorative sequence was made to this scale in a hunting-gathering context and within a tradition whose development and general cognitive strategies can be studied and tracked across thousands of years through the full Upper Paleolithic and post-Paleolithic."

Whatever one made of the semantics and pragmatics of the marks and sets of marks (and these issues cannot be avoided), the "cognitive strategy" (syntax) seemed fairly clear for the simple reason that it was observational for the original creator and thus could be observed by the contemporary analytical scientist. When Marshack discussed "cognition," his first meaning was "observation." Thus, for example, although seasons and movements of celestial bodies may not appear to be regular, the sequence of periods (day and night, changes in the visible moon, the night sky, or the seasonal sunrise) was regular: "The observational lengths of the lunar phases and the days of invisibility vary, the lengths of the seasons vary, the lengths of the days vary, the angle of elevation of the sun each season and its places of appearance on the horizon vary. The motions and periods of the visible planets even more." All of these observable variations could be expressed in notations without counting, arithmetic, or quantification. Marshack's point was very simple: "One cannot *count* the days without some counting system," and none was evident until a much later date. One could, however, express observed celestial regularities as notational sets. These sets, and the combination of sets, were quantitative but they were not counted or summed up. In contemporary language, the sets did not constitute interval data.

A second introductory observation concerned a "correction" to *Roots* that Marshack published after the book had gone to press.[5] Microscopic research, he said, had brought to light data that "have revealed an unexpected tradition, not merely of making images and compositions but of periodic, repetitive use and accumulation of certain classes of images and symbols." He claimed to have discovered at least a dozen classes of symbols and symbol usages, each with its own semantic content and pragmatic significance. Some of these traditions continued into the Neolithic. In "Upper Paleolithic Notation and Symbol," Marshack examined an Upper Paleolithic bone tool from the La Marche site in France that was around 15 KY old. The bone

associated animal, plant, and human images with “sequential sets of unit marks.” His discussion sought to correct the incomplete analysis in *Roots*.[6]

The original microscopic examinations conducted over a three-year period and initially reported in *Roots* “revealed an unforeseen cognitive complexity, which became increasingly apparent as the analysis proceeded.” Following his preliminary analysis, Marshack applied the results to other artifact collections in Europe and then returned to the La Marche bone for a reexamination. On the basis of his more extensive experience examining other European artifacts, the addition of the engraved horses to the already present marks in sets on this bone on reexamination “revealed a complexity of a different order” that had not been previously evident. The engravings had been overmarked or reengraved; Marshack’s attention was drawn to the additional eyes and manes of the horses and to darts and chevrons that had always been there but that he had either not noticed or had not considered significant. The La Marche bone, he said, documented “a cognitive process in which diverse images, various acts of participation (darts, renewals, crossings over), and notations are associated and accumulated. The images suggest a range of possible meanings, but it is clearly in the ubiquitous notations that the clue to the tradition lies.” The main problem was this: How to interpret all this complexity? He began by discussing what could be understood from the observations in the context of other observable artifacts.

According to Marshack, there were no systematic studies of the “theoretical problems,” which he had identified in terms of his syntax/semantic/pragmatic distinctions. The exception was the existence of a few ethnographic comparisons of limited utility (as I argue in the following section). The first thing to note was that, during the Upper Paleolithic, “there were a number of notational systems in use of which the La Marche example is one. Painted sets in the caves of the period apparently represent a different meaning.” Second, this tradition of notation was “informal” so that the style of accumulating sets and subsets “was not culturally determined except in general terms,” namely, that lines or dots or other marks and images were used. Accordingly (once again), what *we* see as a numerical sequence may not be what the mobiliary engraver or cave decorator intended. Comparison with the quite different notational tradition found on the Cueto de la Mina baton from Spain indicated only that both

artifacts consisted of sets of marks so that "almost never, apparently, are the marks made or accumulated one at a time," which is to say numerically or arithmetically. Third, however, when the sequence of sets and subsets on the La Marche bone was compared to a lunar sequence, they provided "an almost perfect observational notational phrasing" from within "the European mid-latitudes," which led to an obvious question: "Why . . . should a hunter-gatherer maintain a lunar notation, which is not arithmetically structured or precise, and which does not visually and symbolically mark off set months?"

Marshack uncharacteristically indicated that ethnographic evidence may be suggestive. Just as Siberians and Native North Americans occasionally began notations with "the moon of the flood" or of spring break-up and moved on to the "moon of freeze-up," so the La Marche bone may contain a seven-and-a-half-month sequence that might have commenced with the March thaw and extended to November, with the first frost or snow. That is, *ex hypothesi*, the bone represented a seasonal sequence that indicated a kind of schedule. Were it also connected to a ceremonial or ritual event centered on the renewal of the horse engraving, "then the complete engraving on the La Marche bone provides an internal consistency and lends a new level of meaning to a corpus of Upper Paleolithic art and notation." Specifically, the notational compositions, which reflected periodic and repetitive use and accumulation of certain classes of images and symbols, may provide clues with respect to the cognitive origins of later formal and standardized systems of writing and arithmetic familiar from the agricultural Neolithic. In short, Marshack's "correction" of the argument in *Roots* amounted to the announcement of a new and even more ambitious research program.

A third preliminary observation is that Marshack extended his microscopic techniques to artifacts from outside the European Upper Paleolithic. In 1972, he directed his attention to two engraved stone artifacts from Aq Kupruk, Afghanistan, initially dated to around 22 KYA but later revised to about 10 KYA.[7] He described a "head" and a notched flat stone but could not say much about them in the context of European artifacts. He simply raised a number of questions, noting that only "broad cognitive interpretations" were possible, all of which were highly tentative. Marshack concluded that his microscopic examination indicated that the various incisions on both artifacts implied "the presence

of a corollary mythology or narration," about which nothing was known. The marks on the flat stone also indicated the existence of a cultural tradition to give them "semantic content." The notched stone indicated a "symbolism of a different order and abstraction from that found in an image such as the carved head, which was both conceived and sculpted as a whole and which even today can be recognized as humanoid without any knowledge of the stored contents originally involved." The notched stone might be part of a ritual, a notation, a sign of inclusion, and so on. About all one could say was that the two artifacts "seem indicative of a rather complex, evolved and multi-levelled tradition of symbolic usage with roots extending at least to the *Homo sapiens* cultures of the early Upper Paleolithic." That tradition, he said, was probably derived from cultural centers to the north and west of Afghanistan.

Marshack also made two analyses of New World artifacts during the 1970s. The first examined a Mesoamerican "calendar board" that looked to Marshack to be a notational document.[8] Marshack's contribution to the symposium devoted to Mesoamerican artifacts was to see if "my methods of analysis, developed for study of Upper Paleolithic notation, could determine and document the fact that the board had been used and reused over a long period. My own interest lay in the cognitive contents and strategies that might have been employed in the notation."[9] In fact, the occasion of Marshack's participation in this symposium was more interesting. In a later study of the symbolic imagery from Öküzini, Anatolia, Marshack provided additional details. There had been many criticisms of his "notational hypothesis," Marshack began. Some said there was no record-keeping at all until the advent of agricultural societies; others said that early notations didn't accord with what contemporary ethnographers knew about "remnant historical hunter-gatherers;" still others said that the notations did not look like modern arithmetical record-keeping and so could be ignored; finally, some said that a single tool or single surface would not have been retained to mark events over different days. All of these criticisms were a priori; none was based on analysis of the notational marks or included discussion of the human capacity for notation or the variability of different notational artifacts. In 1973, Gary H. Gossen, an ethnographer, asked Marshack

> whether it would be possible to subject the "cognitive" method of internal analysis to a blind test. A recently acquired Mayan

> calendar board kept by a shaman of the Chamula people of Chiapas, Mexico, would be sent for analysis in order to determine whether a "cognitive" analyst could derive information about the record-keeping process that had not, or could not, have been obtained by the ethnographer. This blind analysis would be published simultaneously with an ethnographic report on the Chamula culture and the calendar board and an evaluation and comparison could be made of the "cognitive" method. Such a comparative test could not be conducted for any Paleolithic materials, so the challenge was accepted.[10]

Marshack's analysis of the Chamula calendar "was able to provide the anthropologist with internal data on the notational tradition that could not have been obtained in the field."[11]

Marshack next applied the same notational analysis to a pyrite mosaic pectoral or pendant from the Olmec site, Las Bocas, Mexico, using "a sequential reconstruction of its structure and mode of manufacture." As with the "Chamula board," he looked at it as if it were an Upper Paleolithic artifact. Both, he concluded, were evidence of a tradition, not the result of individual artistic idiosyncrasies. Analysis of the Olmec mosaic revealed that it, too, was notational, though it represented "a far more complex integrated system of pre-writing notation than a mnemonic device for remembering sequences of simple events."[12] Marshack concluded that the Olmec mosaic was arithmetic, calendrical, geometric, and notational. Accordingly, "it documents a constellation of cultural skills and strategies that could be used in the maintenance of astronomical and calendric alignments and in the planning of symbolic architectural structures," and so constituted evidence of a significant development beyond the European Upper Paleolithic achievements. Among other features Marshack noted were certain "anomalies" that probably referred to intercalary periods necessary to bring solar and lunar years into phase with one another.[13] For Marshack, the examination of the New World artifacts confirmed the usefulness of the technique he had developed in analyzing the much older European materials.

Over the next two decades, Marshack on at least two occasions extended his microscopic notational analysis to a combination lunar/solar artifact. The first was an analysis of a Winnebago "calendar stick."[14] His analysis indicated it "may be one of the most complex astronomical and problem-solving conceptual artifacts and devices available to North American

Indian ethnology," including "medicine wheels," which, however (so far as I know) he never actually examined. As with the European artifacts, the internal analysis indicated "that we are dealing with an essentially observational, non-arithmetic lunar month." As with the European materials, by "non-arithmetic" Marshack meant "there was not a count of the number of days in a lunar month or a count of the number of days in the lunar or solar year, at least not as clearly defined arithmetical sums," which is to say, its noninterval data were expressed as notation.[15]

Marshack also found evidence of the possibility of an "astronomical conjunction," such as the sighting of Venus, which was also a property of medicine wheels, and of "solar marking" designed to reconcile the twelve-month lunar year with an observational and functional solar year by indicating "the necessary intercalary lunar months." Marshack linked this Winnebago calendar to the Olmec pendant and its lunar/solar intercalation. All such artifacts, including North American medicine wheels and the megalithic alignments of Neolithic Europe, "are the end-products of long historical cultural evolution and development; they are the subsidiary end-products of far more complex cultural processes and of astronomically oriented and time-factored conceptual systems."

A second example of his application of microscopy to ancient artifacts that appeared to reconcile lunar and solar observations was Marshack's 1991 paper "The Taï Plaque and Calendrical Notation in the Upper Paleolithic."[16] The engraved rib fragment was discovered in 1969 by two young French prehistorians, L.-E. Brochier and J.-L. Brochier.[17] Marshack was informed of the discovery by François Bordes, a friend of Movius and later director of prehistoric archaeology for the region, who knew of the arguments and techniques Marshack was about to publish in *Notation*. Bordes suggested Marshack approach the Brochiers and ask to examine the plaque using his new techniques.

His first report was published immediately following the Brochiers' description of several pieces of mobiliary art in the same journal.[18] Marshack reported that he was perplexed by the complexity of the composition. He made extensive notes on the tiny irregular sets of markings, took many photographs, and concluded that the plaque apparently recorded an observational year, and that its relatively recent date (12 KYA) meant it was probably derived from earlier traditions in the Upper Paleolithic. As his work progressed over the next two decades, he developed

an understanding of the great variability of notational conventions not just in prehistoric Europe but also in the New World, Africa, and the Pacific. When he returned to study the Taï plaque in detail, he experienced "a sudden and unexpected unravelling of the notational problem-solving strategies involved in the engraving and the accumulation of marks."[19]

His insight, rather like the insight that led to his understanding of the Ishango artifact so many years before, indicated "the presence of a non-arithmetical observational lunar year" *along with* a "solstial observation and therefore a lunar/solar year." Moreover, this engraving was in the form of a "boustrophedon,"[20] which meant that the plaque recorded a continuous sequence with internal "cueing signs" to indicate in which direction the accumulation of "sets" was to be read. The next step was to consider the "analytical arithmetic," which is to say, Marshack's counting (as distinct from the engraver's arithmetic that *ex hypothesi* was not the focus of a notational document) and what, if anything, it might add to the analysis.

This stage of the investigation "involved the laborious counting of the individual strokes, sets and subsets under the microscope." The conclusion, as measured by Marshack's model of a lunar calendar developed a quarter century earlier, was not surprising: "The Taï notation reflected the use of a lunar observational calendar." In addition, "the more crucial and revolutionary conclusion" was that in addition to the expected lunar observations, there were "clear indications of what could only be interpreted as solar, solstial events," a conclusion that was borne out, as in the Olmec mosaic, by a number of "anomalies" in the pattern of marking that he interpreted as intercalations.

The implications Marshack drew from his analysis were significant. First and most obvious, the Taï plaque, dating from the Late Magdalenian, was in many ways the most complex Upper Paleolithic document yet recovered from a tradition that began 20,000 years to 25,000 years earlier in the Aurignacian. Second, and more important, the development of a lunar/solar nonarithmetic observational notation suggested that the society and culture must have found it useful—the question of "pragmatics" introduced above. That is, "we may have to take account of the likelihood that not only faunal and floral events, but the aggregation and movement of seasonally dispersed human groups, would have been structured to that calendar

frame." In other words, devices such as the Taï plaque could have been used to schedule rituals both inside and outside the decorated caves and not just, for instance, to alert hunters to seasonal migrations of game. That is, the Taï plaque might also be "useful" in a spiritual context and not just a utilitarian one involving food.

The third implication Marshack drew was to him the most important. The presence of a nonarithmetic observational astronomical skill, expressed in and through the Taï plaque "would argue for an indigenous European observational astronomy" prior to the Neolithic. In turn, this "suggests that adoption of a farming way of life" in the Neolithic and Bronze Age, "was prepared for or assisted by the seasonal economic and so ritual calendar of the Paleolithic hunter-gatherers." In other words, the alignment astronomies and "calendars" of the Neolithic, which were crucial to the timing of agricultural planting and harvesting, need not have been imported to Europe along with the seeds of the Middle East. Rather, agricultural practices could have been assimilated into an already existing European lore and narrative regarding the seasons.[21]

Marshack ended this article with some reflections on the connection between his analysis of the Taï plaque and contemporary calendars. All calendric devices, he said, whether arithmetic, as are the Mesoamerican and contemporary Christian, or notational, as the Upper Paleolithic ones, "are essentially positional time-factored structures." By "positional," Marshack meant that, whatever the "conception," whether notational or arithmetic, the meaning existed within a larger frame. Contemporary calendars were positional in the sense that the place of a named day appeared within a seven-day week and named month, the month within a twelve-month year, the position of the year within a decade or century, and so on. "Every calendar is, therefore, a positional temporal frame." This may seem an obvious and even trivial observation, "yet it is a profoundly complex form of integrative imaging and thought." The contemporary system, which today we learn easily as children, was "the end-product of thousands of years of calendric development. The Taï plaque suggests that a comparable complexity of development had been reached some 12 KYA."[22] At the very least, one may conclude that Marshack had found a persuasive answer to the problem of early calendrics that first appeared in his research for the book on the International

Geophysical Year (IGY) more than thirty years before.[23]

In addition, Marshack still had to deal with the nature of the human capacity for notation and its actualization, a problem we discuss in the following section, and the question of narrative, which he raised at the end of *Roots*. As he remarked a few years later, these greatly variable symbol systems cohered within a "functional, if mythologized and metaphorical cultural frame" so that "we can begin to discuss the different systems that appear in the iconographic record, not as 'art,' as animal images, as female images, as cave images, as personal decorations, as signs, etc., but as aspects of an encompassing cultural 'ethos' and an integrated fabric or frame of reference."[24] In this respect, Marshack was elaborating the implications of what he called a "general capacity" in his 1972 article on cognition.

The next three sections of this chapter will consider three themes that Marshack introduced in this later analysis of mostly Upper Paleolithic artifacts, namely, *cognition*, *symbolization*, and *ritual*, and the *evolutionary development of these capacities*. Marshack provided a retrospective account of his own work in the second edition of *Roots*, about which we provide a brief discussion followed by a section dealing with Marshack's critics and the issues they raised; a final section offers some conclusions regarding the significance of Marshack's work for the problem of very early symbolization.

Cognition

Marshack submitted "Cognitive Aspects of Upper Paleolithic Engraving" to *Current Anthropology* in December 1970, before the publication of *Notation* or *Roots*.[25] His concern with problems of Upper Paleolithic cognition stemmed directly from his use of a microscope to discover the presence of cumulative notations on mobiliary artifacts and his creation of new data. The existence of these data made it possible for Marshack to begin interpreting them, however tentatively, in light of the cognitive aspects of the authors or creators of this "art" or, better, of this documentation, and also to understand, even more tentatively, what was symbolized in it, the "semantic content," and what those symbolizations said about the culture of the period.

Unlike the decorations on cave walls and rock-shelters, which

were geographically concentrated, Marshack began, mobiliary art was found all over Europe and dated from the Aurignacian to the Late Magdalenian (34 KYA to 12 KYA). He then provided what is by now a familiar report of microscopic analysis of the Blanchard plaque, the Lartet "knife," and artifact A212 from Les Eyzies, all of which were Aurignacian, and all of which, he argued, showed evidence of a nondecorative and nonutilitarian cumulative notation "with a complex system of visual-kinesthetic and spatial differentiations for the sets, sub-sets and larger superordinate groups." As the Upper Paleolithic proceeded, regional styles evolved from this initial Aurignacian symbolic "tradition." Here Marshack introduced evidence from Ukraine to Moravia, Italy, the Pyrenees, and Spain, including the baton of Cueto de la Mina, which he discussed in the French version of the article on the Montgaudier baton, and which we discussed in chapter 3. All the documents were time-factored, "referring not only to the sequence of engraving but to the probably cultural meanings in these symbolic accumulations." In his early work, "time-factored" had a fairly simple meaning. In his later work the term was both more specific and more complex and was connected to the problem of narrative. Thus, in 1991, for example, he wrote:

> My research assumed that images were essentially "time-factored," that is, they were not simply "art," but were made at the right time, to be used at the proper moment, in the proper way and for proper cultural reasons. I assumed that symbolic images were "time-factored" in still another way: that they always represented or contained an aspect of recognized and symbolized *processes* either in nature or in society and culture. The meaning of an image and its use were, I assumed, often aspects of the processes that were recognized and were, in one form or another, contained in the image. The image had meaning, therefore, only in its cultural context.[26]

In "Cognitive Aspects of Upper Paleolithic Engraving," Marshack took a major step toward his later, almost formular, statement. There was, he said, something more to be discovered in the late Magdalenian batons engraved with plants and animals, including the ibex with an *X* on its forehead: "It would seem," Marshack wrote, "that the images represent storied explanations and myths summing their associated marks. They thus have been related to seasonal, economic, or ritual recognitions or activities."[27]

Before discussing the "cognitive implications" of his analysis

of these Upper Paleolithic artifacts, Marshack provided a highly understated summary of his argument. First, his hypothesis concerning calendric notations first presented in the 1964 *Science* article was strengthened by his subsequent microscopic analysis. Moreover, now it included chevrons, lambdas, grids, and hash marks, all of which were notations that "were exceedingly complex, cognitively and culturally," where "culture" included both semantics and pragmatics. Second, and more significant, the lunar hypothesis "suggests that the Upper Paleolithic notations represent one class of symbol and therefore a specialized cultural usage of the general cognitive capacity." In the language of compactness and differentiation of consciousness, lunar calendric notations were *one* expression of a differentiating human consciousness. That imagery became part of a "tradition" that eventually became, or found expression in, the imagery of the Late Magdalenian batons. In Marshack's language, "the body of mobiliary materials documents the presence of other forms of symbolic marking, including nonlunar notations, and these were apparently used in their own specialized contexts."[28] His concern, in other words, was first to understand these artifacts "in general cognitive terms without knowing its precise meaning" or detailed semantic contents.[29]

By next considering the "cognitive implications" of the changes from lunar notation to the symbolism of the late Magdalenian batons, Marshack introduced questions "of a different order" than the conventional questions raised by archaeologists and paleoanthropologists regarding the evolution of language or of toolmaking. These new issues concerned "integrative" problems "and entail the full constellation of human cognitive skills," which we have discussed in terms of the early differentiation of human consciousness. Marshack, who also used the language of differentiation to describe the more diverse and complex Magdalenian imagery and engraving, said it expressed "a sense of recurrence and periodicity as well as a sense of constancy within the open, variable system." Again, however, he did not claim to grasp the "semantic content" of the symbolism—what the imagery in detail might mean or express in a way that could be recovered and expressed in a narrative. Rather, he sought only to understand the notations and their development "as normal cognitive products of the fully evolved, genetically modern human brain." He then discussed certain problems in neuropsychology as they were understood in the late 1960s, not

in order to "explain human cognition" but to "isolate its components and indicate its physical, material basis."[30] Not here, nor anywhere else so far as I know, did Marshack explain why he dealt with the experiential complex of consciousness and symbolization by reducing this complex to brain physiology. In any event, his anthropological argument can be understood independently of a rather juvenile metaphysical prejudice.[31]

Marshack's reflection on the implications of his discovery of lunar calendric notations led to three significant conclusions. First, the discovery of a 25,000-year tradition from the early Aurignacian to the late Magdalenian "would seem to imply a developing complexity of the structured interrelations of which the notations were a part." What had changed over this period, that is, the differentiation of consciousness, involved the "full constellation" of cognitive skills.

Second, Marshack speculated that the examples of notations analyzed in this and in previous papers "would be of less value to an isolated, barely subsisting nuclear family than to specialized groups of persons involved in storied, traditional, recurrent interrelations and interactions," for example, tribes, clans, bands, and so on. This seems to me to be entirely reasonable and in accord with the arguments of conventional paleohistorians. In other words, there is an interrelationship between the development from simple notation in the early Aurignacian to a more complex "symbolic repertoire" in the terminal Magdalenian. Moreover, Marshack was of the view that this symbolic repertoire was independent of evolving tool technology and provided meanings and stories (storied meanings or meaningful stories) about "the sky, the seasons, and the biologic processes of man and nature," which also seems to me to be entirely reasonable.[32]

Third, the notations reviewed in this article, "Cognitive Aspects," which referred to artifacts that were widely dispersed in space and time, "were exceedingly complex, cognitively and culturally" and could vary in meaning according to the placement of any particular inscription or set relative to other inscriptions or sets. Moreover, although Upper Paleolithic symbolic materials might well be compared with modern "primitive" symbolisms, such comparisons are valid "only if they are comparisons of cognitive processes rather than attempts to explain the semantic meanings in the Upper Paleolithic compositions." Whatever the semantic meaning of these notations, from mnemonic device to score-keeping, message stick, tallying device, calendric tool, and

so on, “it indicates a level of evolved, storied, periodic human interrelation and communication.” When looked at in terms of cognitive processes rather than unknown semantic meaning, Marshack argued that Upper Paleolithic compositions were in fact more complex than those of “the remnant, scattered hunting and gathering peoples of historic times,” such as the San, Inuit, or Australian Aborigines. As a result, he said, Upper Paleolithic cultures played “a central, comparatively dynamic, formative, and revolutionary role in relation to later cultural developments, a role that today’s isolated, peripheral and static hunting-gathering peoples cannot be considered to play.”[33] That is, the differentiation of consciousness achieved by Upper Paleolithic Europeans, as attested by their symbolic artifacts, was greater than that of some contemporary, or at least historic, hunter-gatherer societies.

Most of the critics whose remarks followed Marshack’s paper in *Current Anthropology* focused on the hypothetical nature of his argument and its evident open-endedness, which seems to me to be its greatest strength. David S. Brose, for example, noted that Marshack’s hypothesis was “interesting” but “the data needed to test the hypothesis are simply not available in this article. Nor is there any clear statement of exactly how such hypotheses could be tested.” Movius provided a splendid summary of the origin of Marshack’s project and of his argument. He endorsed Marshack’s claim that “the cognitive complexity of the engraved symbol systems of early Upper Paleolithic man was demonstrably greater than that of any of the iconographic systems of known historical hunter-gatherers ever recorded.” This insight, in Movius’s view, was “of fundamental importance, and it should be carefully considered by all those who have thought about the problem of reconstructing such matters as the social organization of Upper Paleolithic man on the basis of an analogy with present-day hunting-gathering peoples living under environmental conditions comparable with those that prevailed in the past.”[34] It should be pointed out that neither Movius nor Marshack could claim expertise in the “iconographic systems of known historical hunter-gatherers,” nor did they refer to any other discussions of contemporary primitive societies. The point, however, was clear: based on the symbolic evidence, the differentiation of consciousness achieved by Upper Paleolithic people was greater or more extensive than that of contemporary hunter-gatherer societies.

In his reply, Marshack stressed two things: first, that his microscopy created new data by transforming known artifacts into a new intelligible unit of meaning suitable for further study. Particularly, the late Magdalenian images of seedlings, flowers, leafing and leafless sticks, of male and female animals at different seasons, and so on "are so precisely rendered that one must assume that the images represented not genetic plants, birds, fish, or animals, but cognitively, linguistically, and culturally differentiated species, characteristics, processes and interrelations: often in ritual or sacrificial contexts."[35] The second thing Marshack stressed was that the place of lithic manufacture as an element in "symbolic manufacture" had been neglected in the study of lithic assemblages:

> The leap in cognitive complexity involved in the manufacture of symbol and image can be theoretically derived from the evolution of a generalized cognitive capacity for time-and-space conceptualization and abstraction, with tool-making and language as aspects of that development. Image- and symbol-making cannot be derived from tool-making as a manipulative skill. It is the specialized use of this generalized capacity, then, that is apparent in the Upper Paleolithic notations.[36]

That is, a "general cognitive capacity" was responsible both for changes and improvements in lithic assemblages, that is, stone tools, and for changes in language and in capabilities for symbolization.

Symbolization and Ritual

In 1979, Marshack published a report on his microscopic analysis of several artifacts from the Upper Paleolithic mammoth-hunting cultures of the Russian steppes.[37] He described the artifacts and indicated they exhibited a different "symbol system" than contemporary Western European ones: "As the research progressed, it became clear that the tradition of periodic marking and accumulation was one of the fundamental modes of symbol usage throughout the Upper Paleolithic."[38] Moreover, common motifs, such as schematic fish or fish scales, suggested a symbolic tradition with common cognitive roots, that is, roots "based on common modes of perception and common strategies and modes of iconic-symbol use, if not yet acceptable as culturally derived and dispersed." More than the cognitive capabilities that we

discussed in the previous section were implied, however.

First, Marshack concluded, the analytic data and the theoretical questions they raised have a bearing on "all the widely dispersed symbolic traditions of the post-Würm [i.e., post Ice Age, about 12 KYA] and, more particularly, for the rock art of all known preliterate, pre-writing cultures" because these other material remains showed "the same modes of image use, reuse, association, and accumulation" as the Upper Paleolithic traditions. Second, Marshack said, language and the ability to symbolize probably went together, not because of brain architecture, especially not if one finds the contemporary notion of neuroplasticity plausible, but because it was difficult to conceive of "complex, and artificial iconographic traditions," that is, symbols, in the absence of language. Likewise, linguistic semantics were difficult to conceive in the absence of iconographic and conceptual models. Third, Marshack said, "if we assume the presence of certain regularities in the phenomenological and relational worlds of early man," which in more commonsensical language meant, if we assumed that early humans experienced the reality of a cosmos, then "similarities in the symbolic products referring to these [regularities] may not be surprising," for the obvious reason that experiences of the cosmos would be expressed in broadly equivalent ways. Fourth, wherever a water-related image was present in later "proto-historic" cultures, "there is an implied cosmological semantic." This common meaning may be evidence not of diffusion of the imagery or motif "but of a fundamental human recognition of the seasonal, periodic, variable, and life-supporting nature of water-related phenomena."[39] In other words, Marshack argued (quite reasonably in my opinion) that similar or equivalent symbolizations resulted from similar or equivalent experiences, not cultural diffusion of specific imagery. We also may note that Marshack explicitly reaffirmed that some degree of "semantic contents" can be reasonably accounted for in the presence of what are clearly seasonal, periodic, variable, and other phenomena.

Marshack's reflections on the ritual use of both mobiliary art and parietal imagery provided additional insight into the problem of semantic content and pragmatics. In a paper published during the mid-1970s, for example, on the origin of language, Marshack discussed the significance of some artifacts not just in terms of the possibility of ritual use but as persuasive evidence of ritual

use. Consider again the famous Vogelherd horse, carved from mammoth ivory.[40] This "representational" art, he said, was "extraordinarily sophisticated. This is not the way the Ice Age horse looked, for it was short, stocky, and had a thick muzzle and neck and stubby body; the image, therefore, is an abstraction of 'horseness,' depicting the characteristic movement and feel of the species."[41] Microscopic analysis of the horse and of the other Vogelherd artifacts showed evidence "either of long-term use or of an applied symbolic marking." The images were not, therefore "merely representational or reportorial." Moreover, because the Vogelherd artifacts were polished and had rounded edges, this was additional evidence of long-term and more or less continuous usage, that is, ritual use.[42] Perhaps more importantly, Marshack argued and then reiterated that the horse and the other Vogelherd carvings "are neither crude nor primitive and are far more sophisticated than the crudely engraved outlines of animals found during this same early period in the Franco-Cantabrian area, images that had been classified as Upper Paleolithic 'Style I,' i.e., a beginning of human art, by Leroi-Gourhan."[43] Marshack's point was that whatever was meant by the notion of "the origin of human art," it was not found in Leroi-Gourhan's "Style I," when the much earlier Vogelherd artifacts showed evidence of a complex and interrelated symbolic tradition. To recall an insight of Marie König, the question of "origins" is more a philosophical than an archaeological problem. In his comments on Leroi-Gourhan's "Style I," Marshack sensed, but did not resolve, the problem.[44]

Turning to the cave art, Marshack was able to show, with the use of infrared and ultraviolet filters, the sequence of application of pigments. At Pech Merle, for example, the spotted horses were composed initially by drawing an outline to fit the shape of the cave wall, then red and black dots were added inside the first horse, and then above and below it; then a second horse was also outlined and sequentially filled with red and black dots. When the horses were full of dots, negative handprints were added around them. Like the Vogelherd horse, Marshack said, "this wall with its horses had had use and reuse . . . clearly these were not pictures of horses meant to be killed and eaten."[45]

A third example of ritual use of art was provided by the meanders, finger-flutings, or "macaronis" that could be found in many decorated Upper Paleolithic caves. These markings were made by drawing fingers across a soft surface, usually of clay or

mud, on a cave wall or ceiling. Sometimes they appeared figurative; sometimes not. In Pech Merle, Lorblanchet observed, "almost all the cave walls that can be reached without too much difficulty carry these markings."[46] When Marshack turned his attention to these ubiquitous but also enigmatic phenomena, he followed his usual technique of undertaking an internal analysis of the materials. "The way an image or composition was made or used might give more information than the form or 'image' we recognize" because analyzing how something was done revealed something definite, whereas looking at what seems to us to be an image, he reiterated, often revealed only what we were looking for. This was why Marshack was chiefly concerned with "cognitive processes."[47]

Historically, meanders have defied analysis largely, Marshack said, because they were also viewed as somehow constituting the origin of "art." Because occasionally one can find recognizable images in a meander, "it was assumed that it was out of random markings that representational art was eventually born."[48] Marshack's approach was different: he assumed that meanders were not random and that recognizable images were not accidental but an element of culture. The meander, he said, "is surely not a form of hunting or killing magic nor a form of sexual symbolism. Its essence seems to be that it is cumulative, sequential, relational and additive."[49] More specifically, the meander was "one of the earliest *Homo sapiens* symbol systems. It is 'iconographic' but it is not really representational. It is an iconographic element in a participatory, ritual, ceremonial, mythical or narrative complex" that eventually was related to a genuine serpentine snake image.[50] The meander, in other words, was a very compact symbolization of ritual participation in reality. In Marshack's words, "apparently the significance of the tradition [of making meanders] lay in the act of participation and the process of accumulation, performed by adding one's marks next to, or over, another's."[51]

Let us draw a few conclusions from Marshack's discussion of symbolization and ritual. Because symbolic artifacts were not accounted for by their utility, the way we account for tools, they could be understood only within a cultural context. Because such artifacts documented a cognitive capacity of a different order than toolmaking, the question arose: How far into the past can this tradition of symbolism and of human capacities be traced? For reasons already noted, this was not a question of the "origin

of art" or the "origin of human consciousness." Rather it was a problem of historical archaeology.

Early Hominins

As will become clear, Marshack did not answer such questions regarding "origins" because he could not. To repeat a point already noted, the question of what constitutes the humanity of human beings is less a historical than a philosophical problem. Marshack may not have been a philosopher, but he was certainly aware of the relevant philosophical issues and did his best to bring the problems into focus despite the (to him) apparent inadequacy of his concepts and the limitations of a vocabulary designed to account for biological phenomena rather than substantive anthropological reality. Let us recall first his general strategy: having established that a set of notations or other documents are symbolic, and assuming that symbolic artifacts document cognitive capacity and competence, he determined that the next step was to consider the evolutionary conditions surrounding the development of symbolic or symbolizing consciousness.

We begin by examining Marshack's discussion of Neanderthals. It is probably fair to say that scientific knowledge and understanding of Neanderthals increased greatly during the last two decades of the twentieth century. Even so, when Chris Stringer and Clive Gamble, two very well-respected scholars, published *In Search of the Neanderthals* in 1993 their research was already becoming out of date.[52] In the twenty-first century, especially after Svante Pääbo led the team that sequenced the Neanderthal genome, studies of this extinct human lineage have grown enormously.[53] Marshack was thus writing about Neanderthals before they were a popular subject matter for scientific investigation or, indeed, for the imagination of novelists. The questions he raised a generation ago are still pertinent to the problem of human symbolization.

Early in the twentieth century, Léon Henri-Martin began excavating a Neanderthal site at La Quina (Charente).[54] This Mousterian (Middle Paleolithic, 160–40 KYA) site turned up two pendants and an engraved bovid shoulder blade: "These artifacts were never again mentioned in the professional archaeological literature since they were unique and seemed aberrant or experimental efforts and since there was no other known

evidence for a Neanderthal tradition of personal decoration or of manufactured symbolism."[55] Granted, there were problems establishing the precise level at which these artifacts were found, more importantly "it was believed that personal decoration could not possibly have existed in the Mousterian period."[56] A few years later, a finely engraved and nonutilitarian Mousterian bone was found at La Ferrassie (Dordogne).[57] The significance of this find was likewise ignored. Marshack concluded from these events that the quantified data of the archaeological record could be misleading and that for some kinds of problems it was necessary to examine evidence that is rare.[58] Here exhibit number one was furnished by the Tata plaque, which was about 100,000 years old.[59] That is, even though the Tata plaque was statistically insignificant, it nevertheless indicated "a high order of cognitive or symbolic capacity" both in its preparation and use, whatever that use was.[60]

Marshack concluded that the existence of Neanderthal symbolic carving was a compelling indication that this human lineage had a symboling capacity comparable to that of Sapiens.[61] There was evidence that Neanderthals hunted leopards and other felines, apparently for their hides rather than food, which then would be available for ritual and status purposes.[62] The difference between utilitarian artifacts such as tools and symbolic ones was that, with the former, you could learn their use by silently copying. With symbolic artifacts, an appropriate linguistic capability was needed to pass on the significance of a nonutilitarian artifact to one's cultural successors.[63] In short, by Marshack's argument, because Neanderthals were capable of symbolizing, they also must have been capable of speech.

So far as Marshack was concerned, the evidence from the Tata plaque, La Quina, and La Ferrassie, evidence of the range and variability of Neanderthal burials, and the evidence for participation by Neanderthals in ritual and other symbolic behaviors suggested an ability for complex problem-solving. They were capable of organizing game drives akin to North American "buffalo jumps" or "buffalo pounds,"[64] and complex symbolizations, so that Neanderthals existed "at what I would term an evolved 'human' level [that] is greater . . . during the Mousterian period than it is during this same period in areas outside Europe," including the Near East and sub-Saharan Africa.[65] Even though the archaeological knowledge of sub-Saharan Africa in 1990 was much less than it is today, Marshack

still drew a somewhat surprising conclusion, that "the Upper Paleolithic 'creative explosion' seems to represent a regional historical development." That is, the decoration of the Franco-Cantabrian caves "was not related to a biological, evolutionary, or speciation event." Nor was it a beginning of "art" or a universal measure of *Homo sapiens*, "but a measure only of a certain range of that capacity expressed or developed under certain historical, demographic and ecological conditions."[66] Following the interpretive strategy Marshack was using, such conclusions introduced additional problems: What was the genesis of the Neanderthal capacity for speech, symboling, and complex problem-solving? And how, then, were Neanderthals to be related or compared to Sapiens?

In his 1976 paper in *Current Anthropology*, Marshack introduced the term "potentially variable behavior" to account, for example, for the ability of chimpanzees to learn communication skills from humans, which they never developed on their own in the wild. In order to learn human sign language, such chimpanzees, Marshack assumed, had a "potential variable capacity" to do so.[67] A few years later, in his contribution to a book on animal cognition, what had begun as a "heuristic term" was used as if it were a familiar scientific concept.[68]

"In biological evolution," Marshack assumed, "natural selection probably occurs as much for the range of 'potential variable capacity' as for the structure of morphology and the patterned structures of species behavior."[69] The process of hominization, by this assumption, was a cultural process that included selection for certain cognitive and neurological capacities that may have appeared before there was noticeable morphological change. When Marshack started his research, the assumption was that *Homo sapiens* "was a superior, more variable hunter than prior Neanderthal man *because* he had a more complex and efficient tool technology and set of subsistence strategies." This interpretation followed from the Marxist and positivist approaches to archaeology, according to which "art and symbol were 'superstructure.' Economic parameters were assumed to be the fundamental determining factors of human adaptation," including "stone tools, large animals hunted, changing skeleton, and brain volume." Marshack was therefore surprised to discover that the Ice Age symbolic traditions, and the implications they held for cognitive, neurological, and cultural complexities, "were many orders higher than is implied in the

tool technologies and the remains of meals with which they were contemporaneous." That is, archaeologists were for a long time unwilling to accept the presence of notations and thus of symbolization at so early a date as that assigned to the Blanchard plaque (28 KYA) because it did not fit into the categories of contemporaneous tool technology. The same is true, a fortiori, for the Tata plaque and even earlier symbolic artifacts. The assumption, which is no longer accepted as a matter of course by paleoscientists, was that tools were simply utilitarian instruments the design and composition of which had nothing to do with such "superstructural" aspects as beauty. And yet, even the earliest hand axes and choppers also exhibited variable aesthetic qualities.

As he mentioned several times, Marshack considered it highly improbable that the capability to produce such symbolic artifacts could evolve "suddenly," yet it was also true that the Blanchard and Tata plaques appeared "full-blown." He therefore concluded that they were the product of a long development of the competences required to produce them, specifically a highly developed cognitive and manipulo-spatial capacity and skill, including even the presence of language. That meant that the cultural use of notation began during the Mousterian "and perhaps as far back as the Acheulian" (more than 100 KYA), which most archaeologists would have considered impossible.[70] Marshack, however, saw notations *and* tool development as cultural products of biological, neurological, and morphological changes. The development of stone tools, therefore, was a "product of this more generalized developing competence." By the narrative of tool-focused archaeology, Mousterian and also later tools represented "the culmination of at least a four to five million year development of two-handed manipulative acuity and asymmetric, lateralized competence."[71]

The chief defining attribute of hominization, by this argument, was not growing brain size but increased brain capacity, the notion of "potential variable capacity" that Marshack introduced earlier. On occasion, Marshack spoke of a new and complex information-processing capacity. At one point he remarked that "adding tissue to a chimpanzee brain" would not give us a hominin, no matter how it might alter chimpanzee behavior, because "what was evolving [in hominins] was a generalized, variable, behavioral and cognitive capacity," which Marshack also occasionally called a "cross-modal capacity."[72]

Direct evidence to support these various descriptions, he said, can be traced to the very early use of red, brown, and yellow ochre at *Homo erectus* sites, such as Terra Amata, France.[73] However described, this developing capacity enabled Neanderthals, Sapiens, and their predecessors to act and to innovate.

In his Arthur Lecture of 1984, Marshack drew together many of the themes and arguments he had been developing during the decade since *Roots* was published. As further evidence for his "heuristic" of an evolving capacity, he returned to a consideration of artifacts he had already discussed extensively. Both the Blanchard plaque and the much later Taï plaque, he said, resulted from a human two-handed, vision-oriented capacity for variable problem-solving. Moreover, "the two-handed, lateralized, vision-oriented, and tool-mediated skills involved in working a piece of flint are, in general, similar to the two-handed problem-solving skills involved in carving a chunk of Mammoth ivory into a horse or figurine." However, the intent and problem-solving strategies in the two actions are quite different. To carve an image, stone shapes bone; in pressure-flaking, bone shapes stone. "When the bone was used as a pressure flaker, the intent was to achieve a utilitarian cutting edge. In the case of the carvings, the intent was to produce a non-utilitarian, symbolic artifact whose meaning was in the form."[74] In addition, the hands were reversed in that the dominant hand (usually the right hand) manipulated the pressure-flaker bone but manipulated the stone in carving the bone. Either way, the two hands and eyes actualized a variable range of complex problem-solving, which is what he meant by a "potential variable capacity."

The rather awkward term "potential variable capacity" was considerably clarified in 1982 when Gould and Vrba introduced the concept of "exaptation." They developed the term, they said, to clarify an ambiguity in the conventional use of the term "adaptation" by evolutionary biologists that conflated two distinct meanings, current utility and historical genesis.[75] "Adaptations," they argued, "have functions; exaptations have effects," and the static phenomenon of being fit (*aptus*) they called an "aptation." Neglect of exaptation in particular, they said, was a consequence of the emphasis in contemporary evolutionary biology of "the supreme importance and continuity of adaptation and natural selection at all levels" so that the problem of exaptation was relegated "to a periphery of unimportance." By the orthodox argument, if the attributes of an

organism were not "adaptive," they or it would be eliminated by standard selection processes and the relevant attributes or the entire organism would disappear. Occasionally the term "preadaptation" was used by evolutionary biologists, but it was considered undesirable because it carried the embarrassing connotation of teleology. "Incipience," which was also used by Marshack, was not much of an improvement.[76] If some characteristic were fit (*aptus*) before being co-opted by the organism, Gould and Vrba said it was a "preaptation," not a pre*ad*aptation. Such preaptations, they said, "are potential but unrealized exaptations."

An example may be worth a thousand words. As evolutionary biologists, Gould and Vrba were concerned "almost by definition" with discovering the historical pathways by means of which the genesis of organisms (such as Neanderthals and Sapiens) could be described. They "cannot be indifferent" to the fact that similar results could result from different historical paths. Here the distinction between adaptation and exaptation was particularly helpful: "If we ever find a small running dinosaur, ancestral to birds and clothed with feathers, we will know that early feathers were exaptations, not adaptations, for flight." Why? Because feathers were adapted for thermoregulation, not flying, and the running dinosaur did not fly. They concluded: "All exaptations *originate* randomly with respect to their effects." Such was the requirement of Darwinian orthodoxy, in any event.

After 1988, Marshack adopted Gould and Vrba's term as a synonym for "potentially variable capacity." Despite occasional lapses into a language of "pre-adaptation" Marshack had long maintained that human symbolic productions were not immediately adaptive in any evolutionary or biological sense. When he subsequently discussed potentially variable behavior, Marshack was more explicit and exact in his argument. The very early neurological changes that came with bipedalism, handedness, and so on resulted in exaptive effects that eventually led to the visual symbol systems, starting with the use of ochre by *Homo erectus*; none of these effects was immediately necessary for survival.[77]

Adopting the term "exaptation" brought additional clarity to Marshack's formulation of what the historical path of Neanderthal and Sapiens development entailed. Hominization involved selection for change in the capacity for culture, one element of which involved the selection of a unique set of

cognitive capacities based on the adaptive and exaptive development of two-handed, vision-oriented, problem-solving abilities.[78] In his 1984 paper "The Ecology of the Brain" and in his Arthur Lecture, Marshack argued that "the shift to hominid bipedalism instituted major changes in the 'potential variable capacity' of the primate, before evidence of these changes became apparent in brain enlargement or the presence of archaeological artifacts." Feet became less tactile and hands became more tactile and capable of two-handed problem-solving. These neurological, morphological, and cultural changes "apparently entailed profound subsidiary, 'exaptive' as well as adaptive effects. The developing potentiality was apparently opening the way for a host of other skills, including forms of referential and symbolic production." Specifically, the decorated sanctuary caves "apparently began to be used ritually for different ritual purposes at proper times," and so were "time-factored" in Marshack's original sense. It was clear, however, "that the two-handed vision-oriented capacity did not evolve *for* these cultural uses, but that a developing social and cultural complexity made it possible for the evolved set of *potential* capacities to become involved."[79] It seems to me that in his discussion of hominin evolution, Marshack was able to develop something like an equivalent to Kant's notion of purposiveness within his philosophical anthropology, as we outlined in chapter 1. As we shall see in chapter 5, Leroi-Gourhan accomplished something similar.

Retrospective

In 1991, a second edition of *Roots* was published.[80] The insertion of new material led to some dropped lines of text and a few incoherent passages. Marshack was not pleased with the result and sought to withdraw it from publication.[81] It contained a number of responses to his critics, which we discuss in the following section, but it also included a statement about the trajectory of Marshack's research enterprise over the preceding thirty years.

After his extensive studies of Upper Paleolithic artifacts, Marshack concluded that notations were indices of celestial and natural rhythms. But how did the production of notational images and symbols begin? They began, he said, "like language itself began, to mark and refer to the relevant, the meaningful and the recognized—and often also to the unexplained and

unexplainable" aspects of those celestial and natural processes, objects, and relations. This insight, which Marshack "acquired early in the research," led to a second path of investigation, "into the evolution and function of the human brain, and into the role of vision and imagining in the referencing capacity of language" along with an inquiry into the "different and changing worlds or 'realities' that eye and brain 'see' and the different and changing worlds that the brain can create and has created."[82]

From his earliest work on the IGY book, Marshack dismissed the notion of a sudden appearance of, for example, calendars in Egypt or Mesopotamia. In reference to the decorated caves of Franco-Cantabria, he concluded that cave "art" was not the "origin" of anything, let alone modern humans, nor was it an "explosion" of human symbolization. By looking at the development of cognitive and neuropsychological processes during the period of hominization, he was able to guard against "a self-satisfying Eurocentric myth," especially after he encountered the concept of exaptation. Marshack also had to discuss "the inadequacy of the archaeological record, which could deal only with certain temporal and chronological products and processes found in the soil or on rocks, instead of with the nature of the 'potentially variable capacity.'"[83] In this larger sense, and applied to "cultural exaptation," Marshack provided a description of a process close to what Voegelin meant by his concept of compactness and differentiation of consciousness.

Marshack's approach also enabled him to see Neanderthals and Sapiens as comparable, indeed equivalent, "end-products" of a lengthy period of hominization. Both lineages "had a comparable, if not an equal, set of those capacities that were selected for or were 'exaptively' present or developed," though Neanderthal capacities "were utilized in a historically, demographically and contextually different milieu than was present in the European Upper Paleolithic."[84] The equivalency of the two lineages was why Marshack considered the "explosion" of "art" in the Franco-Cantabrian caves to be a local phenomenon that took place under very specific "historical, demographic and ecological conditions." Accordingly, "despite morphological and historical cultural differences, the range of potential capacity for problem-solving and symbolling among the two hominid groups was similar and comparable, if not precisely 'equal.'"[85] This is what we mean by "equivalent."

There was another reason not to overemphasize the

importance or significance of the decorated caves:

> When the Ice Age climate ameliorated and the forests encroached on the land, the huge herbivore herds disappeared, the human cultures changed, the animal art disappeared, the caves stopped being used as symbolic, ritual "sanctuaries," and burials such as those from the Upper Paleolithic that were rich in grave goods and personal decoration ceased being made. We cannot, for this reason, suggest that there was a lessening of the human capacity for social complexity, self-awareness, language or imagery. The populations remained in Europe, though some groups followed the melting ice and the herds of reindeer northward. When the climate and referential context changed, the indigenous languages apparently retained their traditions of reference to, and mythologizing of, the periodicities of the seasons, the sky, and the fauna.[86]

Compared to the decorated caves, the "art" of the later rock paintings in far northern Europe, for example, was cruder. In other words, "when the conditions and the context changed, the 'time-factored' symbolic tapestry disintegrated and 'Ice Age Art' ended."[87] Just as the decorated caves held greater aesthetic appeal compared to Neanderthal artifacts, that was no reason to consider the Franco-Cantabrian "artists" to be "more" human than Neanderthals; nor did the cruder "art" of the Mesolithic make the later "rock-artists" less human than either the Franco-Cantabrians or the Neanderthals.

The hunter-gatherer populations remained in Europe and retained their "highly evolved potentially variable human capacity" along with "the time-factored lore and skill of the Ice Age, which was by now presumably embedded in language, in myth, and in the adaptive behavior and observations of the new Mesolithic hunter-gatherers."[88] New European traditions, along with Neanderthal genes, were retained after the end of the Ice Age. Later technologies, including agriculture, Marshack reiterated, "may have been absorbed into an already extant indigenous seasonal lore of the rebirth and renewal of nature and an ancient skill in astronomical observation." The waxing and waning of the decorated caves, no less than the interaction of Neanderthals and Sapiens, were part of "the unfolding and persistent, variable and changing human drama itself. The drama, as I have felt it, exists in the shifting uses of that 'potentially variable human capacity.' And it is also in the way that periodically, we see that drama and its unfolding so

differently."[89]

Marshack also left an explicit account of his experience of the drama he alluded to. In several of his later writings, he described his experience of Les Eyzies, where he first explained his insights to a skeptical Hallam Movius. The Franco-Cantabrian cultures of the Upper Paleolithic, he said, were largely riverine but varied from coastal lowlands to the foothills of the Massif Central, the Alps, and the Pyrenees, along with great temperature gradients and sharp seasonal changes that conditioned the movement of animals—from fish to aurochsen, snakes to bears. The art and the ecology "were both unique but the development took some 20,000 years."[90] Standing on a cliff shelf above the town near to where Movius had spent so many years excavating the Abri Pataud, Marshack reflected: "The Abri Pataud faces dead west, so that the sun set each evening beyond the flood plain and the low limestone hills that formed the western horizon. Every 29 or 30 days the sliver of the first lunar crescent would appear over these hills, following the setting sun." The cliff shelf was one element in a seasonal observational "calendar." The sky, the river, the winds, the movements of animals could all be observed.[91]

Indeed, Marshack himself observed many natural changes, from the cliff shelf: "There was no way that generations of hunters living on that shelf over a period of 18,000 years or more could fail to notice these periodic changes and movements of the sun and moon." Successive inhabitants of the *abri* at Les Eyzies, from Erectines to Marshack 300 KY later, "would all have seen the same periodic patterns of the sky and seasons with their accompanying changes in flora and fauna."[92] In other words, despite the centrality of anthropological and archaeological science to Marshack's life, he was still capable of experiencing and of articulating the primary experience of the cosmos.

Critics

Some of Marshack's critics went after him because he was a big target. Others simply rejected his argument on more or less well-argued grounds. Still others, following a genuine engagement, sought to expand his approach to other fields or adopt it to their own areas of specialization. Often the first response of a critic was one of shock or surprise at what Marshack was arguing. Often Marshack reciprocated with surprise that the critics did not agree with him or that he was not understood.

In chapter 3 we noted Andreé Rosenfeld's 1971 review of *Notation* and Marshack's rather prickly response to it. Many academic archaeologists received *Roots* in a similar spirit. Ann Sieveking, for example, declared Marshack's "journalistic style" to be "unacceptable." Worse, she said, his conclusions were already considered "unacceptable" when first advanced in a less journalistic style (and in French) in *Notation*. These twin unacceptabilities were particularly regrettable "for a scholarly work produced under the auspices of the Peabody Museum." And yet she had to admit that "Marshack has an observant eye. . . . Nothing to him is irrelevant or accidental." As a result, "Marshack, who is not a professional archaeologist, has made one of the most considerable contributions to the study of Paleolithic art that we have seen in recent years. His publishers are justified in describing his work as a breakthrough and we are in his debt."[93]

Similarly, Arden R. King began his review by noting that *Roots* "has many of the disabilities of a semi-popular book." He faintly praised Marshack's "enthusiasm" but added that as a consequence he "tends to assert far more than is demonstrated." Marshack was, he said, "ingenious," but "distressing to the minds of more orthodox and restrained scholars." It was "all very exciting and dismaying" but then, "if all the foregoing [criticism] is true, why spend so much time and space considering the work of Alexander Marshack? Because he has demonstrated regularities of purposeful markings of Upper Paleolithic date, and because some of his interpretations demand serious examination." But, so as not to end on a note of praise, which would contain an implicit element of criticism of the oversights of academic archaeologists, King ended by deploring Marshack's (unspecified) obfuscations and distortions.[94] By the time the review appeared, Marshack had already published several detailed analyses in academic journals that addressed many of the substantive questions King raised. In his response, Marshack acknowledged that *Roots* was incomplete, not because it engaged in popularization, but "because it represents a stage in the creation of a subdiscipline" and because the analyses were far from finished.[95]

In his review of the second edition of *Roots*, Ian Dawson likewise criticized a style that reflected "Marshack's earlier career in journalism." The result was "a delight" but it was light on analysis.[96] The analysis, of course, had been presented during the previous two decades in scientific journals, but the reviewer

ignored it.[97]

Annette Laming-Emperaire reviewed the French edition in 1973.[98] She also noted Marshack was a journalist, not a professional, which was reflected, she said, in a kind of naïveté regarding several problems in paleoscience that Marshack found troubling but that, in fact, had been resolved. No longer did serious archaeologists speak of a cultural "explosion," for example, and Marshack's criticism of Breuil's hunting magic hypothesis was long out of date among the French. She attributed Marshack's views on the latter problem to a common attitude among North American prehistorians of not keeping abreast of the latest happenings in France. Nevertheless, she did praise Marshack for having introduced a new technique and having used it to great effect. The photographs in his book were excellent, but without an accompanying scale it was hard to tell how large the original artifact was if one had not actually seen it. She also praised his lunar hypothesis and his theory of notations.

We cite these professional responses to Marshack's work not simply to suggest an unusual reluctance to embrace new ideas or an evident need by certified knowers with PhDs to reinforce their own authority and importance. Rather, these responses, with the exception of Laming-Emperaire, by quite ordinary and average members of the profession established or expressed the context within which his work was received. Elizabeth Chelsey Baity, an archaeoastronomer (at the time a minor tribe of paleoscientists), consoled him: "The hostility of some members of the archaeology establishment to new ideas goes far beyond the requisite scholarly carefulness."[99] The results were occasionally serious in the sense that Marshack did not receive funding for a National Science Foundation (NSF) grant until he structured his application in a more orthodox manner,[100] but that was also true for unorthodox applications by certified professionals.[101]

Some outstanding scholars welcomed Marshack's work with enthusiasm. Hallam Movius, who had supported Marshack from the beginning, said he "has made a most significant and important 'breakthrough' in knowledge," one that only happens "once (or at most twice) in a generation."[102] Movius surely exaggerated when he informed the Kress Foundation that "all my colleagues—i.e., professionals in the field of anthropology—have been impressed by the new facts that Mr. Marshack has brought to light." Movius added that "it required a non-traditionalist of Mr. Marshack's calibre to provide that new perspective. For, the

various specialists who had previously studied the materials seem to have completely missed the true meaning of the details. . . . In other words, he has injected an entirely new dimension into the subject, the results of which will inevitably become increasingly appreciated in connection with future research."[103] Claude Lévi-Strauss, of at least equal stature to Movius, called Marshack's work that culminated in the first edition of *Roots* "a bomb that will shake up archaeology."[104] Movius, however, told Marshack not to be overimpressed with Lévi-Strauss's "somewhat philosophical abstract reactions."[105] By the time of his interview for the *New Yorker* profile, Marshack had taken Movius's advice to heart. He said of Lévi-Strauss, among others, that "not one of these people can tell whether I am right or wrong and it is therefore significant that the questions I am asking and the answers I am suggesting are what seem to be seminal."[106] To the extent that science is about asking questions in a certain way rather than providing answers, Marshack's critics could also be seen as genuine scientific collaborators. Eventually Marshack came to see many of them (though not all) in that way.

Many of Marshack's criticisms of conventional archaeological interpretations of artifacts could be summarized in an observation he frequently made, namely, that conventional analysts saw what they were prepared to see and did not see or seek to see what they were not prepared to look for. More aggressively he sometimes implied that they found what they had put there. Such remarks drew a different sort of criticism: Marshack's methodology was so loose and flawed that his results were meaningless. In both natural and social science, methodological arguments are often the last refuge of a critic because they simply reflect different assumptions with which investigators conduct their work. In that sense, Marshack's methodological conflicts conformed to that convention. His general response was to maintain that traditional interpretations were based on an unjustified assumption, chiefly that an apparent visual similarity between certain images and motifs from the Upper Paleolithic and those of today provided a clue regarding the meaning, function, or use of the artifact.

A rather amusing instance was provided by LeRoy McDermott, who argued that the female figurines or "Venuses" were "autogenous [self-generated] visual information obtained from a self-viewing perspective" and introduced as supporting evidence photographs or "photographic simulations" of nude

pregnant women taken by an overhead "look-down" camera.[107] Despite McDermott's praise of Marshack's work, Marshack criticized him rather strongly for being Eurocentric and for ignoring the ritual use that "*all* of the 'human' figures of the Aurignacian" suggested.[108]

Marshack's general criticism regarding "Eurocentrism" raised a hermeneutical issue more fundamental than methodological disagreement. As with some approaches to the reading of texts, Marshack sought to understand Upper Paleolithic imagery the way the maker of that imagery understood it. This was why he directed his criticism so strongly against arguments that allegedly imposed on the material a context chosen by the interpreter. His objection was that the hermeneutical circle of text-and-context, by which all interpretations are inevitably articulated, was distorted in favor of the presuppositions of the interpreter. So far as I know, Marshack never referred to contemporary issues in philosophical hermeneutics, but his criticism of the approaches of others as being subjective, Eurocentric, arbitrary, and so on reflected his own commitment to describe, so far as possible, the "thing itself," as Husserl might have said.

Such an interpretive strategy underlay Marshack's repeated criticism of Henri Breuil and his arguments in support of hunting and fertility "magic," the structuralism of Leroi-Gourhan, or Lewis-Williams's arguments regarding entoptic imagery and shamanism, discussed in part III of this book. All such approaches were, in Marshack's opinion, "subjective" because, with all such approaches, the observer "sees what he wants." To use Marshack's later language, the most that such approaches could achieve was "heuristic." Those whom he criticized, however, thought they were conducting genuine science and testing scientific hypotheses. Marshack did not exempt himself from this problem, so his general point was that all scientists need to be aware of importing their assumptions and then discovering them again as data. To say the least, bias and subjectivity are an old problem in both natural and social science. It is hard to criticize any scientist who reminded his colleagues to be aware of the issue. Moreover, the problem has no solution because there is no final interpretation of reality.[109]

To give a detailed example, the question of subjectivity and bias was central to an article by Paul Bahn, on which Marshack commented.[110] The focus was on the Upper Paleolithic depiction of women, both the "Venuses" and the many inscriptions that

since the time of Abbé Breuil have been widely interpreted as vulvae. And thus began, said Bahn, "one of the most durable myths of prehistory." The ethnographic parallels Breuil used were either imaginary or wrong and his labeling of various ovals, triangles, and lines as examples of *pudendum muliebre* was simply declaratory. In fact, the only definitive vulvae "are those found in context, that is, in full female figures" and these "are very few in number." Bahn proposed, therefore, that these alleged vulvae be described as triangles, ovals, pear-shaped figures, and so on. Such an approach would clearly avoid the arbitrary interpretive declaration that triangles or ovals are "really" schematic vulvae. It would be more prudent to acknowledge that the Upper Paleolithic engravers knew what they were doing and that they had good reason to differentiate a triangle from an oval and both from a vulva.

Marshack responded to Bahn's paper with a comment titled "The Eye Is Not as Clever as It Thinks It Is," *Rock Art Research* 3 (1986): 111–16. The main problem, as he saw it, was that Bahn was able only to observe the images along with the observational accounts of them in the scientific literature. "He has *not* performed a careful, first-hand internal analysis of the artifacts, images or traditions," with the result that he achieved "what might be termed a form of literary criticism and a discussion of merely surface appearances." Marshack's microscopic examination of several artifacts that did not appear to the naked eye to display any sexual imagery (which was why Bahn discounted them) turned out, Marshack said, to be explicitly sexual.

What was particularly unfortunate about relying on the surface study of images, according to Marshack, was that it led to their classification in terms of appearance, namely, shape and style. "This seems like objectivity but is the most profound form of observer subjectivity" because, on occasion, mere geometric forms could be derived from other more explicit motifs. Marshack provided an example of how a specific Magdalenian "oval" was in fact the representation of a fish. He was, in short, advocating a hermeneutic of suspicion that could be enabled by microscopic analysis of apparently similar images.

Marshack ended his comment with high praise for Bahn; Bahn opened his response with high praise for Marshack, and made three points. First, Marshack's requirement that only after having made the kind of analysis that he had done should others venture

an opinion would mean widespread silence. In due course, Bahn said, Marshack's work would gradually be repeated and checked. Second, even surface-based views were not worthless and could be clarified, as Bahn had just indicated, by subjecting certain long-established opinion to critical discussion, as he in fact did in his article of mythic vulvae. That, too, exemplified a hermeneutic of suspicion: "Third, I do not believe that viewing through a microscope always enhances objectivity. It merely provides additional data of various kinds. Marshack talks disparagingly of 'visual surface scanning' or 'eye-balling,' as opposed to the use of the glass eye of the microscope—but there is an eyeball at the other end of the microscope, and behind it a brain which needs to assess what it is seeing."[111]

Bahn's more general point was that Marshack *also* interpreted when he thought he was merely describing: "We all do this to some degree, of course; this is how we identify the animals depicted." But with isolated motifs such as the so-called vulvae, interpretation was inevitable. The representational fish may well have been "schematized," as Marshack said, into nonrepresentational striped ovals, but Marshack had not proved it so much as provided a more or less persuasive narrative interpretation. Where the vulva motif was concerned, Bahn said, "it does not matter how many examples you see or how long you gaze through a microscope—if it is not inside a female body, you are merely saying what it looks like to you."

A decade later, James Elkins, an art historian, elaborated Bahn's third comment with considerable hermeneutic sophistication under the heading "close reading."[112] The term "close reading" was borrowed from a literary theory called New Criticism. It is associated with I. A. Richards in the UK and with John Crowe Ransom and his students, particularly Robert Penn Warren and Cleanth Brooks, in the United States. The focus of the New Critics was on the text rather than the writer, the analogy with Marshack being the latter's focus on detailed examination of the appearance of artifacts rather than interpreting artifacts as evidence of hunting magic, vulvae, or anything else.

Elkins did not propose to look at or "read" artifacts even more closely than Marshack. Rather, he would perform a "reading of Marshack's reading" that turned out to consist of a brief disputation of Marshack's lunar hypothesis, which "often seems patently unlikely," to a much more lengthy criticism of Marshack's refusal or inability to distinguish marks from signs,

decoration from notation, internal from external analysis, and so on. The result, Elkins said, was that "Marshack is unanswerable" in that "he cannot be disproved." Even on the surface, such a comment was otiose: Marshack could be disproved easily enough by having a critic provide more persuasive narrative based on a better, more comprehensive description and interpretation of an artifact. As for distinguishing between a mark and a sign, Elkins was perfectly well aware of the importance of connoisseurship, since he mentioned it in the first paragraph of his paper. In that context, if Marshack had been endowed with particularly keen eyesight, it would have made him a better "looker" at, or "reader" of, artifacts. Likewise, his ability to use a microscope was an element of his connoisseurship.[113]

As is true of so much contemporary literary "theory," Elkins's remarks were far removed from common sense. For Elkins, close reading "is too much, yet it is never enough" because he fancied that close readers cannot answer the question, How close is close enough? The answer in fact was entirely practical, not a priori, hypothetical, or deductive. For instance, if an artifact had been smoothed and rounded by extensive or long-term handling or had been reengraved, it may be possible to see evidence of wear or overinscription *only* through a microscope, though of course you could *feel* its smoothness if you were participating in an Upper Paleolithic ritual.

Some of the commentators on Elkins's essay provided remarks as recondite and abstract as the original. Others seemed to be sensible enough, though rather limited. David Carrier, for example, remarked: "A close reader is someone who sees important details which others who are less observant are too far away to view. But a reader who gets too close, focussing on minor points, is unable to get what, speaking metaphorically, we call the 'big picture.'"[114] So far as perceptual consciousness was concerned, Carrier's comment made perfect sense. From Gestalt psychologists to Merleau-Ponty's *Phenomenology of Perception*, the problem of figure-and-ground had been a major element of perceptual consciousness and a problem persistently addressed by psychologists and philosophers. On the other hand, if participatory consciousness were the starting point of one's reflections, as we argued in chapter 1, the problem of close or not-so-close perception or "reading" disappears.

In a similarly commonsensical though incomplete comment, Iain Davidson remarked: "Did notation happen as Marshack says,

and did the messages have anything to do with the moon? We may never know, but the answer will surely come from better thinking rather than better looking, from closer argument rather than closer reading."[115] All of which may also be true, but Marshack's contribution, through better looking and closer reading, was that he introduced new questions with respect to which better thinking and closer argument were possible and were invited. Before Marshack used his microscope to "read" the markings on bones and stones, no one had deciphered them enough even to suggest, let alone understand, that they were "readable."[116]

Marshack's response to Elkins was restrained. "Close reading," he said, was not "impossible" but part of a self-correcting process called science, for which microscopes and telescopes were useful tools. Marshack provided seven "corrections" to Elkins, but his main point, once again, was a defense of connoisseurship, which he now called "expert seeing." It took him twenty years to figure out the syntax of the Taï plaque, but it must have been obvious to the Upper Paleolithic engraver. For Elkins, a "novice viewer" and one "unfamiliar with notation as a problem-solving mode," when he looked at images of the Taï plaque, Marshack said, he was bound to find nothing but "perplexing static images." The reason was that Elkins had simply used logical analysis of "the static image on the printed page." Accordingly, "he has indicated no knowledge of the Upper Paleolithic materials or their variability."[117] Marshack's so-called close reading was part of a "historical development" not a "philosophical and logical constraint" on a notional "theory."

Two archaeologists, Francesco d'Errico and Randall White, also commented on Elkins's paper and on Marshack. They did so in other places, and the dialogue or exchange of views between Marshack and his two scientific interlocutors illustrated two distinct forms of scientific disagreement. Here we must also consider some context. In March 1989, Roger Lewin, a news editor for *Science*, published a short note titled "Ice Age Art Idea Toppled."[118] It purported to discuss two papers, one by d'Errico and another by White. It was, however, little more than an attack on Marshack.

Marshack was introduced as "an independent scholar in New York" who had come up with an "inventive" explanation of marks on cave walls and portable artifacts "that had a lot of appeal in the interpretation of art as an integral part of prehistoric life,"

namely, that the marks represent a "lunar calendar or a kill tally." Recently, however, "support for Marshack's hypothesis began to erode." As an example, Lewin pointed to White's view that what Marshack saw as the application of different tools over an extended period of time "could in fact be produced by a single tool in a single engraving event." As White explained to Lewin, flint chips and edges grow dull with use, so "lines produced by one tool can look as if they were produced by many." He also told Lewin that it was "easy to engrave fresh bone, very quickly the surface becomes hard," but the engraving then became "very difficult," and the marks looked much different than they do on fresh bone. This observation led White to conclude that "there is plenty of room for doubts about Marshack's hypothesis."[119]

By 1989, Marshack and White had accumulated something of a history. A few years earlier, for example, White published a notice in *Nature* that stated: "I began a systematic inventory of French Upper Paleolithic (35,000–12,000 years ago) materials in American institutions."[120] Marshack immediately wrote John Maddox, the editor of *Nature*, to tell him that White had clearly exaggerated the importance of his own activities and pointed out that at least one of White's alleged discoveries had been included in an exhibition at the Museum of Natural History that Marshack had curated in 1978. Marshack knew this because he had shown the piece to White.[121] He pointed this out in a letter to White.[122] There were other more personal and unpleasant disagreements and disputes to be found in Marshack's correspondence. These also conditioned Marshack's response to Lewin's reliance on White as a source.

Lewin published Marshack's response to his article as a letter in the June 2 issue of *Science*.[123] Marshack began by objecting to Lewin's characterizing him as "an independent scholar in New York," which, as had been true for Marie König, was clearly intended to be both an insult and a way of indicating Marshack was not properly credentialed. Marshack responded that, in fact, "I am a full-time Associate in Paleolithic Archaeology at the Peabody Museum, Harvard University," and that he had been a Harvard Corporation appointee for more than two decades. Second, Marshack said that although hunting tallies may have existed in the Upper Paleolithic, "I have not found them, nor have I claimed them." Indeed, anyone even slightly familiar with Marshack's work would know that a good deal of it was directed against the notion that the various bones he examined constituted

a hunting tally. At one point he observed that no one had ever satisfactorily explained why an Upper Paleolithic hunter would want to keep score in the first place or would take the time to do so.

Lewin's reliance on White's opinion that the possibility of wear and breakage meant that it was impossible to observe notational accumulations was exactly wrong: "It is precisely this process that helps verify the notational hypothesis." How? Because "the light engraving of notational sets" showed no changes up to and including "the last stroke of a set." However, the next set "begins and continues with a dramatically different cross section," which constituted evidence of a new engraving tool. Lewin also quoted White's view that fresh bone was easy to engrave but old bone was difficult.[124] This, Marshack said, was also wrong. Tests on Aurignacian ivory and bone had shown that "the engraving of a set of short and light, tiny notational marks, often to the scale of the marking on a centimeter rule, is not difficult and seldom causes change to a point." In 1970, tests conducted in the UK indicated that fresh bone was difficult to incise "because of the fat in fresh bone, but that slightly cooked or weathered bone, such as would be found in a homesite scrap heap, is easy to incise."[125] Marshack reiterated that notational analysis was extremely complex. The possibility that the largely erroneous opinions reported by Lewin might "topple" his hypothesis, as Lewin's headline declared, was preposterous. That was not how science worked.[126]

A few months later, White again criticized Marshack in a very public way, this time in the pages of *Scientific American*.[127] According to White, Marshack said that the Blanchard plaque was "an early lunar calendar. Many archaeologists doubt this interpretation, partly because the Abri Blanchard and adjacent sites have yielded many objects with similar designs that do not appear to have any calendrical function. It seems more reasonable (and just as significant in evolutionary terms) to argue that the aim was aesthetic, not notational." It may even be representational, White suggested, though he did not venture an opinion as to what might be represented on the plaque.

In December 1989, *Scientific American* published a letter from Marshack and a response to it by White. There were some disputes about dates, but Marshack's main objection was stated as follows: "I have reported the differences between the internal structure of the Blanchard plaque and that of contemporaneous

forms of engraving. White does not provide an analysis of the Blanchard engraving: he merely argues about its seeming similarity to other objects."[128] White began his reply, "I respond to Mr. Marshack at the risk of giving greater credibility to his remarks than they deserve. I wish merely to enumerate his many errors of fact and logic." Their subsequent references to one another over the following decade were equally and uniformly unfriendly.[129]

Lewin's article was, at least in form, a report on an ongoing scientific enterprise where disagreements were the norm rather than the exception. The British equivalent to *Science*, namely *Nature*, also contained a report by Paul Bahn on Marshack's work and d'Errico's experiments designed to test aspects of Marshack's interpretation. The difference between Bahn's report in *Nature* and Lewin's editorial was striking.[130] Likewise Marshack's disagreements with d'Errico were professional—though they did not begin that way since Lewin had lumped d'Errico in with White in his initial *Science* article. Accordingly, Marshack's initial response to d'Errico was highly guarded.

D'Errico's "Paleolithic Lunar Calendars: A Case of Wishful Thinking?" appeared in *Current Anthropology* in February 1989.[131] By "wishful thinking" d'Errico meant what other archaeologists sometimes called a "just-so story." In this article he reported on his effort to validate experimentally the criteria by which Marshack and other archaeologists decided that marks on artifacts were calendric notations. He did so by first making fifty burins of flint and jasper similar to late Upper Paleolithic tools. He then made marks on a hundred limestone pebbles and examined them using an electron microscope, thus providing himself with an even closer physical reading than Marshack attained using an optical microscope. D'Errico then applied the same microscopy to replicas of 122 engraved Azilian pebbles (10 KYA to 8 KYA) and determined that all the marks were made over a short period of time by the same tool. He concluded that "the interpretation of these schematic incisions is therefore still open" and that the interpretation of the marks as calendars may stem from modern researchers "projection of what we imagine prehistoric man was like."

On March 3, 1989, *Current Anthropology* accepted Marshack's response and six weeks later d'Errico's reply to it.[132] Marshack again pointed out that lunar notations were not arithmetical and so not expressions of interval data. Second, he said that d'Errico's

use of an electron microscope confirmed what he had argued in *Notation* two decades earlier. Third, he agreed that many pebble scratches were nonnotational. Some simply showed "the periodic use of motifs and with ritual marking." Most Upper Paleolithic notations were inscribed on lighter, more portable materials, such as bone, ivory, and antler, a point also noted by Bahn.[133] "Incised stones, therefore, represent a different class of material and symbolic artifact," wrote Marshack. Finally, he again emphasized the importance of connoisseurship: "Verifying notation is never simple. It requires some theoretical understanding of symbolling modes and strategies and, if one is dealing with a possible lunar notation, of astronomical periodicities. It also requires some knowledge of the diversity in the traditions of marking present within the period and culture being studied. The mere use of a microscope, without an understanding of the theoretical and methodological problems involved in notational and symbolic analysis, can never be adequately informative."

In response, d'Errico focussed on what for him was the most important question: methodological precision. "For more than 20 years," that is, from the time Marshack wrote *Notation*, "we have awaited a precise description of the criteria that constitute [the] foundation" of Marshack's microscopic analysis. The only way to establish such criteria was by experimentally reproducing the conditions of the prehistoric engraver and thereby "demonstrate the links between the engraving, the tool, and the engraver's actions. Marshack has never even attempted such a demonstration. His error, then, is that from the beginning he has used a method that has not been established experimentally." Accordingly, when Marshack claimed that d'Errico had confirmed his interpretation, "he is placing microscopic evidence that has been demonstrated experimentally . . . on a par with simple intuitions deduced from comparative observation of engraved lines on archaeological objects." For d'Errico, science was determined by one method: experiment. Thus Marshack's nonexperimental procedures had "nothing to do with scientific research." Another way of putting d'Errico's criticism would be to say that Marshack retained sufficient common sense to avoid an unduly more narrow understanding of what counted as science.

Over the next few years, Marshack and d'Errico corresponded regularly. In part these exchanges were facilitated by Paul Bahn, who was friends with both. Early in 1990, d'Errico sent a letter to Lewin disassociating himself from White and apologizing to

Marshack.[134] Within a year d'Errico invited Marshack to dine at his place in Paris.[135] They still had their differences, of course, but they were civil and friendly in the language they used to express them.[136] Occasionally they achieved a qualified agreement.[137] Marshack said to Chris Scarre, editor of the *Cambridge Archaeological Journal*, "His criticisms of me and of the notational hypothesis have for years been as harsh as possible, without descending into the diatribe mode. And we have remained friends."[138] D'Errico agreed.[139]

Of the many criticisms of Marshack's work, some were assertions of the archaeological orthodoxy that he sought to challenge. Others were personal. Elkins's criticism, that Marshack did not justify his "reading distances" and so was "pathological," may have been a silly thing to say, but it did remind researchers that the conduct of science was not a tributary of technological change. It was not the microscope but Marshack who made the interpretations and exercised judgment, which was not to say that the use of the microscope was unhelpful in formulating interpretations.

For example, in 1969, François Bordes described an ox rib fossil from Pech de l'Azé (Dordogne) as having inscribed on its internal face a series of intentional lines that "seems to be by far the oldest engraving known," dating from the Acheulean.[140] A few years later, Marshack agreed with Bordes that the markings were intentional and serpentine.[141] Moreover, he did so on the basis of his optical microscopic examination of the bone. A few years after that, d'Errico suggested, and then demonstrated, using an electron microscope, that the "meanders" were not made by humans but were the traces left by blood vessels.[142] The point is that close reading, along with a critical scientific approach, could reveal information unavailable to the naked eye or even to optical magnification.

Conclusions

Alexander Marshack's work was especially significant for the field of archaeology. He "single-handedly revolutionized the field of Paleolithic art research," Bahn said.[143] Most obviously he was "the father of the current technologically-oriented phase of European Ice Age art studies."[144] Certainly his "splendid macro- and micro-photographs opened new horizons."[145] Equally significant, "he was able to do what nobody had ever done

before, or perhaps ever will again—to travel all over Europe, visiting not only many decorated caves but also all the portable art objects scattered throughout the continent, including Russia."[146]

Marshack was criticized by many academic archaeologists and ignored by many more. Regarding his own academic credentials, he thought briefly about applying to Cambridge for a PhD, but he never did. Nor did he ever receive an honorary degree. Yet, his status as an outsider also liberated him to follow his own insights, even though it made his discoveries difficult to fit into an archaeology curriculum.[147] One of the consequences of Marshack's discoveries of so many new problems was that he never was able to formulate a master narrative to give his argument coherence and plausibility. That is one of the objectives of this and the previous chapter.

Another objective has been to indicate that Marshack's work had a direct bearing on the problem of early political symbolism. In keeping with a rather conventional understanding of natural science, Marshack looked at the sequence of hominin evolution for evidence of the long-term development of human cognitive capacity. Notwithstanding this element of conventionality, his emphasis on the exaptive potential of bipedalism, asymmetric lateralized competence, sequential manipulo-spatial development, and so on were controversial, as were his use of an optical microscope or ultraviolet photography. Unlike Marie König, Marshack did not shy from confrontation and argument. He developed his own somewhat idiosyncratic language to raise questions regarding the interpretation of signs, images, and artifacts by distinguishing among cognitive strategy or syntax, meaning or semantics, and use or pragmatics. Much of his attention was, in fact, devoted to describing the links among what he saw as discernible stages of image and artifact formation. This focus on syntax was undertaken in the hopes (not always met) of reducing the influence of subjectivity. His disagreements with others, however, reinforced the fundamental principle of all science, including political science, that scientific discourse is the expression of a specific person's experience of reality whatever the degree to which it aspires to be transparent for a common reality.

Marshack repeatedly returned to artifacts he had previously examined in order to look again, not perhaps with fresh eyes, but on the basis of greater experience and, he thought, with greater

insight based on that experience. His guiding assumption was that, by trying to account for how an image or artifact was made, he would provide more information about it than could be obtained by projecting on to it interpretations based on theories of one sort or another. He used ethnographic evidence as a source of analogical arguments sparingly and with caution and kept his focus on Upper Paleolithic imagery and artifacts that, he said, reflected a sophisticated cognitive capacity. Some artifacts such as those discovered at Vogelherd showed clear microscopic evidence of lengthy handling and ritual use. Likewise some of the parietal art was evidently used in ritual activity. In all his investigations, Marshack's focus was as much on the cultural, spiritual, or psychological changes of the artificers as it was on technological changes evident in the artifacts.

His argument regarding calendrics in particular led to the conclusion that the seasonal and ritual calendars of the Neolithic and later periods were initially developed as calendric notations in Upper Paleolithic societies, which he understood as additional evidence that they, too, were formed by ritual. His argument favoring the Upper Paleolithic "roots" of Neolithic and later phenomena was an instance of his early rejection of the notion of the "sudden" emergence of a technology or symbolization. Eventually this understanding of the *longue durée* enabled him to write easily of a 25,000-year tradition extending from the early Aurignacian to the terminal Magdalenian. One need hardly make the point that he was discussing a very long time period within which developed the cognitive and experiential skills Voegelin referred to in terms of the differentiation of consciousness that also could occur within a much shorter time.

For Marshack, human beings were not primarily toolmakers but symbol-makers; the creation of symbols was coeval with language. As Krupp said of him, "For Marshack, astronomically significant notations meant storytelling, and because storytelling can provide an accurate description of nature, it is a tool for survival."[148] Or, as Marshack said with evident common sense, "Nobody ever made an image without having a name for that image and a story to go with it."[149] With stories came myth and narrative but, lacking any detail regarding the semantic content of such discourse, all he could do was evoke the primary experience of the cosmos that, presumably, would have attained some kind of narrative expression. His later reflections on sunset at the Abri Pataud indicate that Marshack was fully aware of the

problem.

Stories were tools for survival as Krupp put it, because they expressed the drama of a ritual integration of societies with cosmic rhythms. Such integration was pragmatic because it was important for hunting and gathering persons to know when the herds would pass by, when the fish would return upstream to spawn, or when women would be fertile. Rituals were also symbolic because they enabled humans to find meaning in birth and death, order and disorder in society, politics, or individual life. Marshack's focus on Upper Paleolithic calendrics and lunar notation was not simply "syntactic." There was, at least in principle, the semantic reflection that the one doing the notation experienced a sense of inevitability and submission, not a magical power over the divine cosmos or its inhabitants. As in the work of König, one finds in Marshack's narrative and arguments a provisional description of the semantic content of Upper Paleolithic consciousness.

PART III

The French Achievement

CHAPTER 5

From Breuil to Leroi-Gourhan

Early Disputes

The first artifact from the Upper Paleolithic identified as "art" was dug up during the 1820s by Paul Tournal, who is widely credited with inventing the term "prehistoric," or *antéhistorique* in French.[1] Unfortunately, the piece of reindeer antler he found was subsequently lost.[2] Over the next several decades additional examples of mobilary art were found, chiefly in France and Switzerland, many of which were catalogued as "Celtic," which effectively meant "pre-Roman," because the notion of the Upper Paleolithic, to say nothing of Upper Paleolithic art, did not exist. By the 1860s, a sufficient number of engraved and carved artifacts had been discovered, many in the caves and rock-shelters of southwest France, in association with the bones of extinct animals and stone tools, for the concept of prehistoric art to be persuasive. However, because these artifacts were pleasing to nineteenth-century European aesthetic sensibilities, and their makers were assumed to have been primitives, it was difficult for the scientific authorities to know what to make of them. "By 1867, however, Paleolithic art was sufficiently well established for fifty-one pieces to be included in the 'History of Work' section of the Universal Exhibition in Paris," said Paul Bahn.[3] What followed over the next several decades was widespread plundering of sites that likely contained artifacts. "They were dug up like potatoes," said Bahn, which is to say little attention was paid to their stratigraphic position by which their age might someday be estimated. Nor did these entrepreneurs pay much

attention to the decorations on the walls, likely because it was assumed that nothing as old as the portable art could have endured that long, and because there was no way independently to date the imagery.

Although some of the most famous decorated caves, Chauvet, for example, or Lascaux, were discovered only in the twentieth century, others had been available for human exploration and use since Paleolithic times. Some showed traces of Roman and medieval graffiti, but none was mentioned in any publication before the nineteenth century. As with the earlier difficulty that academic authorities had in accepting the great age of mobilary art, the same was true with respect to cave art. Indeed, the respectable scientists of the day were of the view that no parietal art could have existed in Paleolithic times. Period. One reason seems to have been the widespread belief in progress, whether leavened by Darwinism or not. If historical progress were simply accepted as self-evident, this meant that early art meant primitive art. And yet the decorated caves were beautiful by contemporary standards. How could this be when the dogma that humanity advanced from primitive simplicity to civilized complexity was taken to apply to all areas of human endeavor, including art?[4] This same attitude characterized the practitioners of what we now would call normal archaeological science. It is well illustrated by the oft-told story of the discovery of the magnificent decorated cave at Altamira, Spain.[5]

The cave was first discovered by the dog of a tenant farmer, Modesto Cubillas Perez, in 1868. Cubillas mentioned the discovery to the landowner, Marcelino Sanz de Sautuola, who made his first visit in 1876. He noted some black painted signs on the wall but nothing more. In 1878, Sanz de Sautuola attended the Universal Exhibition in Paris, held to celebrate the recovery of France from the humiliation inflicted by the Prussians in 1871. He was much impressed by the Stone Age artifacts on display and discussed their significance with Édouard Piette, France's greatest contemporary prehistorian.[6] On his return to Spain, Sanz de Sautuola started digging in caves near to his home (one could hardly speak of "excavation"), and in 1879 he returned to Altamira. Sometime during the late summer or early fall he was digging up the cave floor near the entrance looking for artifacts. His daughter, Maria Justina, wandered off inside the cave and returned excitedly announcing "mira, Papa, bueyes," "look, Papa, oxen."[7] She had discovered the bison ceiling, probably because,

as a little girl, she could walk upright where grown-ups would have to stoop or crawl, head-down (see image 5).

Sanz de Sautuola was initially incredulous; then he thought it was a joke, but eventually became dumbstruck in wonder and enthusiasm.[8] Unlike the child, who simply saw the amazing "oxen," her father had to overcome the filter on his perceptions imposed by "science." Gradually, he entertained the possibility, then the probability, that the cave decorations were as old as the mobilary art he was looking for. Sanz de Sautuola then contacted Juan Vilanova y Piera, Spain's leading paleontologist, who visited the cave and was persuaded of the antiquity of the parietal art. Vilanova gave a lecture about Altamira, which was picked up by the Spanish press, thus turning the cave into a pilgrimage site. Sanz de Sautuola took steps to secure the cave, and the local government passed a bylaw requiring a municipal guide to accompany all visitors. In 1880, Sanz de Sautuola published a small booklet that raised the possibility that the decorations dated from the Ice Age, "the first illustrated account of Paleolithic cave art."[9] Later that year, Vilanova presented a paper on the discovery to the International Congress of Anthropology and Archaeology meeting in Lisbon. The assembled savants were incredulous and smelled a hoax.

Led by Emile Cartailhac, the most influential of the French scholars, both Sanz de Sautuola's discovery and the account of the cave interior were dismissed. Sanz de Sautuola might have been ignored because he was a self-described amateur. Vilanova was less easily dealt with. It would appear that French self-regard was also involved. Most of the paleoscientists of the day were French, and "everyone" knew that southwest France was the cradle of prehistoric art, not Spain. Besides, the bichrome drawings were far too sophisticated for such primitive artists, which meant they had to be fake, which meant Sanz de Sautuola was a dishonorable con man. Moreover, so as to remain secure in their rejection, none of the distinguished Frenchmen accepted Vilanova's invitation to visit Altamira and see for themselves.[10] A year later, in 1881, Edouard Harlé, a French engineer and an envoy of Cartailhac, inspected the cave and repeated the official views of his countrymen. Cartailhac published Harlé's account in the prestigious *Matériaux pour l'Histoire primitive et naturelle de l'Homme*.[11] Harlé's reasoning ranged from the plausible scientific observation that, if the cave paintings were as old as they were said to be, there would have been soot from Paleolithic lamps on

the walls and ceiling, but there was none. He also noted that some paintings were covered only by thin calcite flow, so they were relatively new. His main reason was stylistic. The deer were rendered accurately but the "aurochsen" did not look like wild bulls. Their heads were wrong and they had humps on their backs. Apparently Harlé had never seen a bison or even a picture of one.

Meanwhile, Sanz de Sautuola and Vilanova continued to present arguments at international meetings of prehistorians, but they were effectively ignored by the guardians of (French) normal science. Among the major figures of the day, only Edouard Piette defended the authenticity of the Altamira decorations, much to the outrage of his fellow citizen-scientists.

Not until 1895, when the French prehistorian Émile Rivière explored the cave of La Mouthe, happily situated north of the Pyrenees in the Dordogne, and discovered engravings, images, and in 1899 a stone lamp, was cave art acknowledged by the official (French) scientific community as real. Prior to his excavations at La Mouthe, Rivière had visited Altamira, and in August 1895, he described La Mouthe at a conference of prehistorians where he was supported by Piette.[12] One of the reasons the "curious designs" of La Mouthe were accepted as being of great age was that many of them were covered in calcite. Over the next few years, as additional French caves were explored and described, eventually the evidence overwhelmed even the stubbornness of Cartailhac, who, in 1902, published his famous "Mea Culpa d'un Sceptique," a curious document that both admitted his earlier mistake and defended the position he had taken two decades earlier.[13] The Spanish press eagerly reproduced Cartailhac's retraction and celebrated the vindication of Sanz de Sautuola.[14] The Spanish celebration, like the earlier French denial, of the authenticity of Altamira combined national pride with criticism of the anticlerical prejudices of the French that had prevented them from acknowledging the possibility that humans living in the Upper Paleolithic might have some kind of "religion." Indeed, one account suggested that Cartailhac's friend, Gabriel de Mortillet, thought that antimodern Spanish Jesuits were promoting Sanz de Sautuola's nefarious views and during the 1880s had warned Cartailhac not to be fooled.[15] He wasn't.

The earliest "theory" advanced to explain the meaning of this art also reflected the climate of learned opinion. Just as contemporary Victorian paintings of landscapes and portraits

were meant to provide decoration and entertainment, so too the mobilary and even the parietal art was meant to amuse. Hence the popularity of the otherwise vaguely bohemian, antimoralistic, and certainly anachronistic account: *l'art pour l'art*, "art for art's sake."[16] Such an interpretation of what was known of mid-nineteenth-century mobilary art might have seemed plausible enough, but whether it was a sufficient account of the rich imagery of the caves was highly questionable. As late as 1987, however, John Halverson argued that a revised version, advanced by Georges-Henri Luquet and Max Verworn, was still worth considering.[17] Halverson was particularly critical of ethnographic analogies that compared Upper Paleolithic people with contemporary hunter-gatherers and argued that paleoscientists needed to concern themselves with "beginnings." From that starting point, he argued, "Paleolithic art has *no* meaning" in the sense that it had no "religious" or other mythical reference. It was simply "representation for representation's sake." Moreover the content of the representation was straightforward: "The overwhelming majority of images—many thousands—look simply like pictures of animals."[18] Much of the argument recapitulated positions outlined in the nineteenth century, though without the anticlerical overtones. The proponents of art for art's sake argued that the animal imagery had logically to precede any ritual use made of it so that "the art is prior to magic," and magic was the main purpose defended by those who supported ritual art. Obviously, they said, if the art were not already there, it could not be used for ritual purposes. To this apparently logical priority of art, Henri Bégouën had already replied that the rock formations themselves suggested the shapes of animals so the artistic activity or the making of imagery might have been minimal in any event.[19]

In his argument, Halverson combined the romanticism of Schiller with Ernst Cassirer's neo-Kantianism and speculated that the production of "naturalistic" images of animals (without, however, the reproduction of a naturalistic setting or context) simply reflected Verworn's argument that Paleolithic hunters were preoccupied with animals. This may be so, but it nevertheless begged an important question: Why did humans reproduce the images of animals, on cave walls or on mobilary art? Of course, as Halverson said, the images were consciously created and thus "invited" a conscious response, that is, a response that was disengaged from the empirical existence of

natural animals. “It may be,” he concluded, “that the true significance of Paleolithic art lies in the history of consciousness,” the first chapter of which consisted in abstracting from actual animals and reproducing an image of them on a piece of antler or a cave wall.[20]

In the commentary that followed, several paleoscientists noted that Halverson was silent about why the initial or even “second wave” art-for-art’s-sake interpretation was abandoned. For example, Bahn noted, first, that the aesthetics of cave imagery was independent of its meaning or, as Llamazares said in her commentary, the imagery is “polysemic.” Moreover, the sheer numbers of images in the caves, mostly horses and bison, did not correspond to the actual population distribution of Paleolithic fauna. In addition, the distribution of images was influenced by their location, which suggested, Bahn said, a “complex meaning behind both the subject matter and the location of Paleolithic figures.” In truth, such patterns “surely” suggested a symbolic interpretation of some kind.[21]

On the other hand, Halverson was to be praised for linking the production of representations of animals to the history of human consciousness. Unfortunately, he did not elaborate this insight. Second, he was also doubtless on the right track to consider the imagery as an instance of human creativity and “play.” Whatever additional significance one might argue for, the ludic aspect of creating these representations carried its own significance. Although Halverson did cite Johan Huizinga’s *Homo Ludens*, he did not, unfortunately, provide any analysis or discussion of the implications of Huizinga’s argument for understanding Paleolithic art.[22]

Leaving aside art for art’s sake, in terms of the history of the interpretation of Paleolithic imagery, the discussion of the “pictures of animals” in the late nineteenth and early twentieth centuries took a decidedly utilitarian turn. Specifically, the anthropological study of Aborigines and the application of Australian ethnographic evidence to the equally “primitive” hunters of the Upper Paleolithic, led several paleoscientists, of whom Salomon Reinach, who had replaced Gabriel de Mortillet as director of the Musée des Antiquités nationales in 1902, was the first.[23] If Aborigines enacted ceremonies to increase the availability of game, by analogy so too were Paleolithic hunters engaged in a magico-religious practice.[24] The most important advocate of the “hunting magic” interpretation of cave art was

the Abbé Henri Breuil.

Breuil

We have already encountered critics of different elements in Breuil's interpretation of Paleolithic art. However, he was significant not simply for advocating a now-superseded approach. As his first biographer, Alan Houghton Brodrick, put it: If we asked, "What did Breuil actually do?" the answer was clear. "He gave us prehistory as we understand that word today," meaning the mid-twentieth century.[25] Over the course of his long life he wrote more than a thousand scientific papers and was often the first authority to whom new discoveries were communicated in the expectation that he would, on the basis of his extensive experience and learning, render an illuminating judgment. Because he was a founding professor at the Institut de Paléontologie humaine from 1910 on, professor at the Collège de France after 1929, and member of the Institut de France after 1938, his views, in the hierarchic world of French academic life, were generally accepted as definitive.[26] As one of his successors, André Leroi-Gourhan, said, "I must emphasize that Abbé Henri Breuil, not in the flesh but in the form of his scholarly legacy, was our constant companion in the field; I am far more indebted to him than may be evident"; perhaps not evident because Leroi-Gourhan took a much different approach to the cave art than did Breuil. Breuil was praised by nearly all his critics for his exquisite aesthetic sensibility.[27] His career was, however, controversial—particularly, as we shall argue, regarding his primary successor, André Leroi-Gourhan.[28]

Arguably the most important thing to consider with any artifact or image was its date of composition for the obvious reason that dates, even relative dates, were broadly indicative of the cultural context of the object, which would shed light (perhaps) on its significance. Initially, the evidence was almost entirely of stone axes. One of the earliest chronological categories distinguished between chipped and polished axes.[29] Édouard Lartet proposed a sequence based on the predominance of bones found in the caves (bears, mammoth and wooly rhino, reindeer, and aurochsen). Other sequences, including that of Sir John Lubbock (1834–1913), who invented the term "Paleolithic," were also based on the presence or absence of extinct animal bones. Gabriel de Mortillet (1821–98) argued that because fauna varied

with latitude, their bones were unreliable indicators of age; he proposed a refined set of categories based on stone tools: simple tools preceded more complex ones; stone preceded bone. He also introduced the term "industry," which is still used to describe specific toolmaking traditions. Mortillet distinguished tools on the basis of specific sequentially dated archaeological sites: Mousterian, Solutrean, Aurignacian, and so on.[30] The principle of discrimination between earlier and later, based on stratigraphy, confirmed that later tools were produced in more complex sequences and the results were more refined, as a thin biface stone blade is more refined than a hand ax or chopper. Varying stone implements and faunal remains provided the basis for a relative chronological sequence that was then used to date mobilary and subsequently parietal art.

By the late nineteenth century, the chronological sequences were well-established conventions. In the fall of 1900, Emile Rivière invited Breuil to trace or draw the La Mouthe wall decorations. The abbé thus began his true vocation. A year later he was in the company of Louis Capitan and Denis Peyrony in Les Eyzies and with them explored several local caves, including Combarelles and Font de Gaume. Breuil later recalled the excitement he felt and the skepticism of critics who were unwilling to accept the great age of the imagery.[31] Following Cartailhac's 1902 "mea culpa," the question of the Paleolithic origins of cave art was more or less settled. Hurel observed, "A scientific revolution was underway and the Abbé's work made him one of the most active participants."[32] In 1902, Cartailhac invited Breuil to join him at the Marsoulas cave in the French Pyrenees to record the art there. Breuil put his artistic skills to good use.[33] Cartailhac then proposed that he and Breuil visit Altamira on the other side of the mountains, where again Breuil made several pastel copies that, he said, reflected "the spirit of the original."[34] That is, Breuil produced interpretations of what he saw on the wall.[35]

In 1906, Breuil obtained a job teaching at the University of Fribourg in Switzerland, and postponed any attendance at parish duties. In fact, Breuil occasionally married, baptized, and buried persons, and celebrated Mass, but not as part of his regular priestly duties.[36] He also met the prince of Monaco that year at the annual Prehistory Conference. Because the Church did not pay Breuil to do science, Prince Albert became, in effect, Breuil's much needed patron.[37] Albert was also instrumental in

supporting the publication of the Altamira art as he was founder and financier of the publisher, the Institut de paléontologie humaine. During the winter of 1906–7, Breuil was again working with Cartailhac in southwest France and also in northern Spain.[38]

As early as 1905, Breuil began to modify Mortillet's systematic classification of tools in what became known rather dramatically as the battle of the Aurignacian.[39] A few years later, Breuil had succeeded in connecting changes in tool production with changes in perceived artistic styles, thus effectively winning the "battle."[40] Breuil was able to undertake this attempt to date the cave art in part because, by the first decade of the twentieth century, a sufficiently large number of sites had been discovered to provide meaningful comparative data. Moreover, the circumstances surrounding the survival of the art at any particular cave site could be specified so as to make additional comparisons. Perhaps most importantly, Breuil was familiar with a sufficient variety of images that he could distinguish them in terms of style. Once again the importance (and the limitations) of connoisseurship came into play.

Breuil simplified his understanding of the developmental sequence by borrowing from ethnography and by assuming, as did Georges-Henri Luquet before him, a parallel between the "origin of art" in the "reindeer age" and the development of children's drawing abilities.[41] It was for this reason that Breuil considered the "macaronis," or finger fluting, to be among the earliest cave art. The plausibility of the analogy depended on accepting the notion that the development of children to adults was akin to the collective development of humans from the "childhood of humanity."[42] One of the most important features in determining the relative chronology of an image was the presence or absence of what Breuil called the "twisted perspective" whereby the body of an animal was presented in profile, the horns or antlers and sometimes the tusks were presented straight-on, and the hooves were presented in terms of the prints they might leave in the dirt or mud. Obviously, the information would be useful to hunters,[43] but for Breuil the "twisted perspective" was evidence of primitiveness or archaism. In response, Bahn has shown that the presence or absence of the twisted perspective "is very far from being a reliable chronological marker."[44]

In 1905 at Périgueux, Breuil presented his first synthesis of the evolution of cave art. He detected five phases, a position he reiterated the following year in Monaco.[45] In his 1912 article,

Breuil proposed four stages of development of Paleolithic art. In his final synthesis, *Four Hundred Centuries of Cave Art*, he reduced the sequence to two "cycles," the Aurignaco-Perigordian and the Solutro-Magdalenian. In the absence of any technical means of directly dating the art, the change from four to two categories was evidence enough for the limitations of connoisseurship.[46] Lawson noted, "Although Breuil had established the age of each cave in his own mind, his classification was difficult for others to follow . . . the application sometimes seemed too intuitive or idiosyncratic."[47]

Breuil's use of ethnographic analogies to evoke a meaning to the imagery was likewise both imaginative and limited—and many of the limitations have been noted already in our discussion of Marshack's work. When Breuil and Cartailhac published their account of Altamira in 1906, they argued at some length on the basis of ethnographic data for the importance of art as a form of sympathetic magic. The assumption was that "primitive" hunters, whether contemporary or Paleolithic, used the same techniques to ensure success. A few years earlier, on a trip to the UK, Breuil had purchased a book by Henry Balfour, curator of the Pitt Rivers Museum at Oxford, that summarized current ethnographical thinking on the question of the "cultural evolution" of humanity. Specifically, Balfour declared that carving animal figures on bone and antler was also an instance of sympathetic magic akin to contemporary "savage" practices.[48] In 1903, Reinach published his groundbreaking article on art and magic. Reinach, in turn, had been influenced by British anthropological theory, particularly that of Sir James Frazer, and current field reports from Australia.[49]

In short, sympathetic magic was, in the early twentieth century, considered very much up to date. Even though Breuil may have changed his emphasis after 1924, and although he wrote critically of other interpretations, "his fundamental thesis concerning the magic and religious significance of cave art never varied."[50] Indeed, in *Four Hundred Centuries of Cave Art*, he reiterated the argument first made a half century earlier. To begin with, he said, it was important to notice that the object of the hunt was *big* game. "If there is no big game hunting, there is no naturalistic wall art . . . hunting periwinkles and snails did not feed their artistic imagination." Second, as every hunter today knows, there is never quite enough game. How much more widespread would that experience have been in Paleolithic times:

"Now, at the season of big game hunting, the daily pursuit of game and its multiplication by nature, or the success of hunting expeditions were the principal anxieties. . . . To realize this [i.e., success] rites were required, dances and ceremonies, endless examples of which are known amongst all hunting peoples, in which the 'Great Spirit' ruling all the forces of Nature is invoked, and the souls of the Animals slaughtered are invited to reincarnate."[51] Breuil said there were subcategories of magic: pregnant female animals represented reproductive magic, dangerous male animals that had been stabbed represented destructive magic, others shot with arrows represented hunting magic, and signs such as grids represented traps and snaring nets.[52]

Despite his confident rhetoric, Breuil also knew that there were not a few defects in his account. For example, "the birds, so numerous in the kitchen refuse are rare in the decoration of small objects and very rare in wall Art."[53] Likewise fish were rare in the caves, but a significant element of the original Paleolithic diet. The most famous example of disproportion is Lascaux, where reindeer provided 90 percent of the bones and one image.[54] Lascaux was not alone.[55] Notwithstanding the limitations of Breuil's account or of the limited applicability of ethnographic analogy, Breuil's theory also confirmed the more general argument of this book. The two poles of magic and sorcery, on the one hand, and of belief in gods or spirits, on the other, were not mutually exclusive. As Laming-Emperaire said, they "interpenetrated."[56] Moreover, this interpenetration was the major hypothesis that sustained much of the twentieth-century interpretation of cave art. Magic entailed the drawing of divine power into the world to bolster human action; the gods or spirits were the source of that power. Or, to use the language of Henri Frankfort that we introduced in part I, there existed a consubstantiality between the divine or spirit world and the world of humans. That is, the fundamental cosmic structure so amply documented in the great agricultural and cosmological empires of the ancient Near East was also present in the Upper Paleolithic, at least to the extent that Breuil's "hunting magic" interpretation was persuasive. Despite the many criticisms of Breuil and however justified they may be, the *significance* of his more or less discredited theory, as Laming-Emperaire had pointed out, was that the two parts of the cosmic order did indeed interpenetrate. Her qualified justification or qualified criticism of

Breuil, it seems to me, was a major insight on her part.

The homage paid to Breuil for most of the twentieth century, of which the quotation from Leroi-Gourhan given above was typical, also indicated that Breuil's work provided a very large target for others to aim at in order to correct his interpretations and his chronologies. In 1935, Breuil received a letter from Max Raphael; Raphael addressed Breuil as "Cher Maître." He described his experience of visiting several of the sites around Les Eyzies: "Standing in front of the originals, I came up with the hypothesis that where one finds spatial proximity among several animals one also finds an intentional meaning that needs to be recovered."[57] Raphael's experience and the hypothesis he drew led a younger generation, including Leroi-Gourhan and Laming-Emperaire, to raise new questions and suggest new answers.

Raphael

Max Raphael (1889–1952) belonged "to a generation of Marxist art historians . . . who are largely ignored now."[58] Raphael was born in the village of Schönlanke, West Prussia, into a solidly bourgeois family of Jewish textile and cloth merchants. His overbearing mother directed him to a religious-centered education. Following her death, in 1900, his father sent him to Berlin to live with his grandparents. In the city he attended a gymnasium, and at the University of Berlin he began the study of economics with Gustav von Schmoller, a historical economist with strong socialist views. He then moved to Munich to continue his studies with the equally left-wing economist Lujo Brentano. Against his father's advice, he changed his field of study from law to philosophy, which he studied with Georg Simmel in Berlin and later with Henri Bergson in Paris, and to art history, which he studied with Émile Mâle in Paris and Heinrich Wölfflin in Munich. In Bavaria he met and befriended the German impressionists, including Klee, Marc, and Pechstein; in Paris he met Picasso, Matisse, and Rodin. By 1905, he was sufficiently leftist in his political views to express great sympathy for the Kronstadt mutiny in St. Petersburg.

His relations with authority were invariably fraught. Following his move to Berlin he began a "rebellion against the strictness of family life," including a refusal to accept any support from his relatively well-off father.[59] Simmel apparently told him, "Since you are such an independent spirit, there is nothing much

for you in the university." Upon his return to Munich, and filled with enthusiasm about the Paris art scene, he proposed to Wölfflin that he write his thesis on the exciting French developments. His *Doktorvater* replied, "Such a topic is of no interest to me."[60] Despite this discouragement, he wrote a study of modern art from Monet to Picasso anyhow, and by 1919 it was in its third edition. Raphael was conscripted in 1915, deserted two years later, and left Germany for Switzerland.

In 1920, he was expelled by the Swiss and returned to Berlin, where he managed to support himself on his writings before being appointed in 1924 to the Berlin Volkshochschule Gross-Berlin, a kind of adult education institute, and a few years later he was teaching at the Marxistische Arbeiterhochschule von Grossberlin, a more explicitly Marxist workers' educational institute. At both places he taught art history, mathematics, philosophy, and biology to working-class men and women. His art history classes formed the basis for *The Demands of Art*.[61] In 1932, when his proposal to teach a course on dialectical materialism from Marx to Lenin was turned down by the administration, he resigned from the Volkshochschule and left Berlin for Switzerland. By 1933, he was again in Paris. There is no evidence Raphael ever joined the Communist Party. As one of his admirers observed, "By the cultural hierarchies he was dismissed as an unintelligible but dangerous Marxist; by the party communists as a Trotskyist."[62] Given his issues with both formal and informal authorities, it was no surprise that he did not admire the Soviet Union.

After the 1940 blitzkrieg and the fall of France, Raphael was interned by the Nazi occupation forces either as a Jew or as a suspected Communist (or maybe both), first at Gurs in the Pyrenees and then at Camp des Milles in Provence, from which he escaped via Barcelona to Lisbon. He sailed aboard the SS *Mouzinho* to New York on June 10, 1941, along with many Jewish children who had to leave their parents in France in order to receive special visas from the U.S. State Department.[63] Life was also difficult in the United States. He was unemployed and "nearly destitute when in March 1944 he sent [Stanley] Young the résumé of a book on prehistoric cave painting." The book argued "that the cave paintings were not primitive but had qualities essential to works of art." In 1945, his wife, Emma, joined him in New York. Despite having asked relatively well-off friends, including Theodor W. Adorno and Meyer Schapiro, for

assistance, Raphael was on his own, but Schapiro had helped him get out of Europe, and along with Kurt Valentin, who ran a gallery in Manhattan, introduced him to the Bollingen Foundation.[64] For a time they lived on Emma's earnings as a cleaning lady. In June 1945, he received a Bollingen fellowship that paid $100 a month (about $850 today).[65] Also in 1945, Bollingen published his *Prehistoric Cave Paintings*, which is the focus of the analysis in this section.[66] In the late 1940s, things must have been looking up for Raphael, but in 1952 he grew depressed, and, apparently driven to distraction by the heat of a New York summer, he committed suicide.

Raphael was schooled in the standard, normal, orthodox Marxist aesthetic doctrine, which was both historicist and reductionist. "Art" was part of the ideological superstructure of society. It both reflected and often also obscured the more fundamental substructure of economic and technological relations that (according to Marxists) expressed the basic historical dynamics of transformation of the means of production, exchange, and distribution of social wealth. Raphael was an intellectually orthodox Marxist only to the extent that he considered Marxism "a method of understanding culture," not "a method of politically transforming the world."[67] More important than his conforming to Marxist orthodoxy was the degree to which this highly original thinker deviated from it. The résumé of the book he sent to Young provided an obvious clue: the cave paintings "had qualities essential to works of art." The language of essential qualities is not common in Marxist studies.

In his introduction to *The Demands of Art*, Herbert Read, an English art historian (who also happened to be a political anarchist and, one assumes, a spiritual brother of Raphael), noted that the author began his argument from a "dialectical" passage of *A Contribution to the Critique of Political Economy*, where Marx wrote (in contradiction to Marxist orthodoxy) that "certain periods of highest development in art stand in no direct connection to the general development of society, nor with the material basis and the skeletal structure of its organization."[68] Raphael's theory of art, Read said, "may be regarded as a commentary on this passage, which he calls Marx's most important declaration on the subject." It's true that Raphael quoted from this work of Marx and that it did influence his argument in his earlier work, *Proudhon, Marx, Picasso: Trois Études sur la Sociologie de l'Art*,[69] but his sole quotation from

Marx's *Contribution to the Critique of Political Economy* in *The Demands of Art* (186–87) is focused on a rejection of Marx's historicism and an elaboration of the ontological implications of there being "qualities essential to a work of art."

Consider first his rejection of historicism: "If we apply to the thesis that art is an ideological superstructure its own proposition, i.e., that of historical materialism, we find that historical materialism itself is only an ideological superstructure of a specific economic order—the capitalistic order in which all productive forces are concentrated in the economic sector." Raphael drew from his rejection of the dogmatic nonreflexivity of orthodox Marxism only the conclusion that art could transcend the occasion of its creation. He did not extend the same implication to "religion." "Nowhere," wrote Raphael did Marx

> ever exclude art, as he excluded religion, on the ground that there would be no place for it in classless society. The pseudo-Marxists who put art on the same footing with religion do not see that religion sets limits to man's creative capacities, diverts him from the things of this world, and reconciles class antagonisms by obviously imaginary and frequently hypocritical theories of love, whereas art is an ever-renewed creative act, the active dialogue between spirit and matter; the work of art holds man's creative powers in a crystalline suspension from which it can again be transformed into living energies. Consequently, art by its very nature is no opiate; it is a weapon. Art may have narcotic effects, but only if used for specific reactionary purposes; and from this we may infer only that attempts are made to blunt it for the very reason that it is feared as a weapon.[70]

Apart from a biographical accident, namely, his youthful rejection of a traditional Jewish piety, there was no reason not to consider "religion" also an "ever-renewed creative act" or an "active dialogue between spirit and matter." For Raphael, such a possibility and the reality of experiences that might sustain it were rejected *tout court*. In that respect he conformed to Marxist orthodoxy.

Despite his exclusion of "religion" from consideration, Raphael did elaborate the implications of the "essential features" of art. In a manuscript on philosophy of history, for instance, Raphael wrote: "There seems to be no evolution in art itself (only change in its appearances). Homer is as great as any writer of later times. . . . Art is one, history is various and multiple."[71] Raphael drew a number of conclusions regarding this special

status of art. First was the importance of "form." The artist's experience was unimportant and merely private if it had not achieved artistic form. The work of art, he said, "is reality enhanced" by form. Because of form, art engaged the senses "and is yet a symbol of nonsensory meanings" that evoked deeper meanings without ever ceasing to appeal to our senses.[72] This also meant that a work of art was self-sufficient in the sense of being independent of the subjectivity of the artist and capable of expressing "all its essential features." It was a Gestalt "endowed with its own life" that existed at a different level or in a different order than that of things or of psyche because it was both isolated from the outer world of things and independent of the inner world of spirit. "The inner unity of the work is what makes self-sufficiency possible," and that inner unity could be expressed in the analysis and narrative of the interpreter or critic.[73]

> Of equal importance to the formal attribute of art was its connection to creativity. Art is the summit of all creative acts for the following reason: each creative activity destroys its own result by its creative power. A physical or spiritual need satisfied immediately creates another more difficult to satisfy with the means that are at the disposition of mankind at that particular moment. . . . The artistic creativity is the only one that originates in the field of history but then can ascend to the field of values, where it may be destroyed physically but not spiritually.[74]

Moreover, the "field of values" or "world of values" looked more like a Platonic idea than the historical product of Nietzschean will. Accordingly, "to deny the existence of universally valid criteria in evaluating works of art is not only to eschew one of the most self-evident problems but also to destroy the world of values, since the true and the good lose their normative character once art is left to individual taste."[75] As for creativity itself, human beings acted creatively, he said, "because we are a reality that encompasses and ennobles the existent. Creation does not take us out of the world but helps us to stand back from it—the more so the more fully involved in it we are. . . . In this sense our awareness of relativity bolsters our aspiration to perfection."[76]

One of the most interesting and, at least on the surface, non-Marxist implications Raphael drew concerned the permanent features of society within which artistic creativity expressed itself. Artistic creativity may originate in the "field" of history but the "possibilities" or the "structure" of human beings and societies

"have always been the same. . . . In other words, man has not changed structurally and civilization has not changed structurally. We have different kinds of culture or civilization; we do not have a state of pre-civilization and of civilization. The structure of a civilization is basically the same."[77] All that changed were human activities, which became more or less complex, but did not constitute any "progress," along a notional timeline toward an imaginary goal. In *Prehistoric Cave Paintings*, Raphael wrote that, within a limited arena, such as the Upper Paleolithic or, more likely, within a shorter time period, man "secure[s] the relative domination of the world he knows," but at the same time that knowledge transcended the world and destroyed its limits, thus creating "a new and wider basis of existence *out of* the old one, then alongside it, and following it." This "longitudinal phase" always understood the preceding one as being less complex than the present:

> The world of Egyptian agriculture is simpler than the world of Phoenician maritime trade: the world of the nomad hunter simpler than the world of the Mesopotamian peasant. But this "simplicity" is entirely relative: the late hunting age is more complex than the early age of the farmer working with hoe or stick, and for that reason the frescoes on the ceiling of Altamira are more complex than the ornamentation of Neolithic earthenware. Man again and again starts from the beginning, each time on a higher level, that is to say, he finds new forms of expression for developments that have already run their course elsewhere, and rushes on toward new stages that have not been passed by mankind before. But all the fundamental categories are present even at the lowest stage, and both at the lowest and the highest spirals of development they unfold their activity in antagonistic dimensions and diverse domains that form a totality from which the forward-moving stream issues. In this sense, paleolithic painting is a very complex developmental stage within an early epoch of mankind.[78]

The implications of Raphael's position, based essentially on his unorthodox Marxism, meant that both the "cycles" of Breuil and the later "styles" and "periods" of Leroi-Gourhan, discussed in the next section, each of which assumed a development from simplicity and abstraction to complexity and realism, would have to be reconsidered. This problem was not encountered again for half a century until the discovery of the parietal images at Chauvet cave, the images of which contradicted the historical

model developed by Leroi-Gourhan. In short, Raphael's criticism of Breuil regarding composition of the cave imagery anticipated that of Leroi-Gourhan; his argument regarding the dialectic of art and the world within which it developed anticipated the criticism of Leroi-Gourhan made, for example, by Jean Clottes, which we discuss in chapter 6. Raphael was both an original and underappreciated thinker.

One sympathetic (and Marxist) commentator summarized his argument as follows: "Raphael's analysis suggests that a tendency toward increasing complexity of economic and social organization will obscure the relationship between artistic productions and the economic basis of society."[79] This was true enough, which was why we said Raphael considered Marxism not as a specific set of propositions or a "content" but as a method of analysis that enabled him to discuss contemporary art, such as that of Cézanne or Rembrandt (to give two examples from *The Demands of Art*) more or less on their own terms. The simplicity or complexity of any particular society nevertheless mattered, but in the sense that the simpler the social, economic, and technological organization, the more directly art reflected the actual mode of communal existence. In this context, the most simple of social-technological-economic organization meant no classes. In orthodox Marxism, and in Raphael's version, classes were said to mediate art and "material life" and to provide an ideological obfuscation to class conflict. By Marxist lights, apparently there were no "classes" prior to the advent of Neolithic agriculture and the domestication of animals. Paleolithic hunting and gathering by "clans," Raphael argued, was thus open to an interpretation that directly related material life—animals—to art. In Marxist language, the simplicity of Paleolithic economy, society, and technology ensured there was very little "ideological" mediation or "alienation."[80] This social organization was called by Marx and Engels "primitive communism." It was a prelude to class society and the overcoming of class society as "final communism." Whatever one makes of his discussion of Paleolithic art in detail, and despite his use of Marxist jargon, Raphael did introduce new questions.

Raphael called his approach an "empirical theory of art" because it began with a direct and experiential consideration of the work and not with social and historical accounts, theories of cognition, aesthetic value, and so on.[81] His "empirical theory" put him in opposition to orthodox Marxism but also to what he

called *a priorism*, by which he meant the kind of neo-Kantian formalism advocated by his one-time supervisor, Wölfflin. If there were structures in the work of art, they were to be discovered there and described by paying close attention to detail. Mathematics, he argued, could be helpful if it expressed actual empirical structures but was misleading if it was imposed on the materials. Nor was he interested in the purely aesthetic significance of art. By analyzing its composition and construction, he said, analysts could gain an insight into the social and historical conditions that attended its production. As Raphael argued, the internal structures of a work of art had implications for its external condition. In short, "according to Raphael aesthetic analysis is the precondition of an adequate sociological interpretation of art," which reversed the usual argument in Marxist sociology of art where aesthetics was subordinated to social structure.[82]

Raphael has had some influence on art historians.[83] With the exception of Annette Laming-Emperaire and André Leroi-Gourhan, discussed in the following section, his influence on paleoscience has been minimal. Truitt echoed Berger in saying that Raphael was distrusted by both Marxists and non-Marxists.[84] In addition, however, paleoscientists likely ignored him because his Marxism led him to make interpretations and assertions that, from their perspective, were clearly speculative and ungrounded in the conventional understanding of scientific evidence. For our purposes, his "unorthodoxy" in the context of both Marxism and paleoscience constituted the heuristic strength of his interpretations. For our purposes, in short, it was not the theoretical inadequacy of Marxism as a philosophical anthropology that counted,[85] but what the application of a Marxist perspective to the cave imagery brought into focus or brought to light, notwithstanding the larger problems of Marxist anthropology.

Shortly after his arrival in New York in 1941, Raphael began a study of Neolithic Egyptian pottery collected by the Metropolitan Museum. His general interpretive strategy followed the standard Marxist approach to art in a "class society" that assumed that changing forms of pottery reflected changing economic and social conditions.[86] In addition to this conventional Marxist infrastructure/superstructure relationship, and in keeping with his empirical theory, Raphael also was interested in the more or

less autonomous development of the "magic signs" of Egyptian pottery and their relation to the signs found in the cave art of the Upper Paleolithic. To simplify Raphael's not always consistent argument, the art of "clan" societies, namely, the hunter-gatherers of the Ice Age, could be more realistic and complex than the simpler and abstract art of the Egyptian Neolithic, even though Neolithic social and political order was more complex than that of the Upper Paleolithic—which was another way of expressing Raphael's argument that art was not simply superstructure. Raphael gained this insight in 1935 when he visited several of the decorated caves around Les Eyzies. He did not, however, read the reports of the excavations until he arrived in New York. Between 1941 and 1945, he produced thousands of pages of notes, studies, and sketches, which he called a "synthetic" approach, as distinct from what he called the "analytical method" of Breuil, which, he argued, had a twofold defect: it isolated the animals from one another, and it separated the animals from the "signs."[87] In contrast, his method "aims to reveal the meaning of differentiated attitudes of individual animals; then the meaning of small groups of different species of animals; finally, the meaning of groups of different species of animals, anthropoids, and abstract signs."[88]

Whatever summary term is used to describe Raphael's approach, it was certainly complex. For example, in *Prehistoric Cave Paintings* there were several allusions and even direct references to contemporary politics. To begin with, the book was "dedicated to the people of France and Spain who are fighting for their liberty." Second, Raphael saw a close parallel between what V. Gordon Childe, the British-Australian Marxist archaeologist, called a cultural-historical revolution,[89] and the position Raphael thought humanity had attained during the twentieth century.

Paleolithic art looked modern, Raphael said, because it was produced in a "historical situation" not much different than that of contemporary humans, by which he did not mean to suggest that the twentieth century was on the cusp of actualizing a "classless" society. The similarity lay elsewhere. During the Paleolithic, he said, humans "instead of being dominated by animals . . . began to dominate them." Moreover, this "initial emancipation from the animal state" was comparable to the hoped-for final emancipation promised by Marxist eschatology. "Today," he said, "mankind, amidst enormous sacrifices and suffering is, with imperfect awareness, striving for a future in the

eyes of which all our history will sink to the level of 'prehistory.' Paleolithic man was carrying on a comparable struggle. Thus the art most distant from us becomes the nearest; the art most alien to us becomes the closest."[90]

At the end of his study he returned to the observation that "Paleolithic art is as distant from us as it is close to us." The separation in time meant we were confronted "with a great number of facts that for the time being we are unable to read or interpret." As a result "pseudo-scientific pride" could simply say the art was silent for us because it was primitive, "that laziest excuse of humanistic science in the period of monopoly capitalism, intended to conceal the lack of ideas and their deterioration in a whole historical epoch." Correctly interpreted, however, this art "is close enough to us to make us feel the unity of mankind and reduce the seeming difference between history and prehistory." In 1945, the reduction of the difference between history and prehistory was not simply a consequence of the similarity between the apparently "classless" life of a hunting and gathering society and the final classless society promised by Marxism. It was also a consequence of the fact that some things never change: "Then, as today, man was oppressed by man; then, as today, art represented the wishes and interests of the ruling classes, which possessed the spiritual and material tools and weapons. It is because prehistory is not yet ended but can still be said to be entering upon its last stage, that paleolithic art is again so tremendously effective today." Even though "paleolithic man roamed about restlessly looking for food, within a limited area" but "we dominate the whole planet only to see our food withheld from us by monopolies," both we and our Paleolithic predecessors were "enslaved to a master class in process of social disintegration; this common destiny partly explains the present impact of paleolithic art."[91] The parallel between the Upper Paleolithic and the mid-twentieth century was thus a consequence of equivalent historical contexts. But where did that sentiment come from? According to Spyros Papapetros, Raphael was evoking a return to the beginnings of art in the Upper Paleolithic because of a "cosmic anxiety" triggered by the atomic bombs dropped on two cities in Japan and also expressed in what subsequent Marxists called "late capitalism" and what Raphael referred to in terms of food shortages. By this interpretation, Raphael was providing a "cyclical analogy" similar to Vico's *corso* discussed in *The New Science*.[92]

Whatever one makes of Raphael's cyclical or dialectical analogy, one must state the obvious: he had seemingly abandoned the notion of Paleolithic simplicity, the "primitive communism" of Marx and Engels, in order to discover the presence of class society even among hunter-gatherer "clans." This may be why he ended his study with a predictable but not entirely appropriate moral exhortation: "The study of paleolithic art should serve as a reminder to us that it is high time to put an end to the prehistory of man and to begin a new era, in which the human race will consciously make its history. 'What's past is prologue.'"[93]

Leaving aside Raphael's consistency as a Marxist and the theoretical issue of his heterodox Marxism in general, let us consider what Raphael's study achieved. In contrast to Abbé Breuil and his predecessors, Raphael argued that there was no insight to be derived from ethnographic data. The people of the Upper Paleolithic were heroic; they were "history-making peoples," unlike the "so-called primitive peoples of today." The Paleolithic people "squarely confronted the obstacles and dangers of their environment and tried to master them," whereas contemporary primitives were "stagnant" because they refused the challenge and compensated for it by superstition. Ethnography, he concluded, was of no use to "reconstruct" early history. This argument led to a related problem: because contemporary art historians did not connect the Paleolithic imagery to the (heroic) social conditions, they looked on the cave art "as a collection of unrelated fragments" rather than the formal composition of groups of animals.[94]

Despite his professed admiration for Breuil, there was no question of his disagreement. After visiting several caves around Les Eyzies, Raphael in his 1935 letter pointed out their differences: the meaning of the *composition* was yet to be recovered. To assist in the recovery, Raphael "prepared statistical counts of predominant animal identities and motifs, comparing the topography and placement of figures and non-representational signs and markings in relation to each other in a single cave and to all other caves. Gradually he began to see patterns emerging that he hypothesized had a particular content he could interpret."[95]

By looking at the dispositions of animals and their formal groupings by species, Raphael argued that it was possible to discern their recurrent meanings and thus "throw more light" on

the significance of the art, namely, that it represented the artists' social group and social relations within what we (following Raphael) have been calling "clan" society. Some of these relations, he said, may be adequately captured in the notions of hunting and fertility magic, but not all. Animals on one side of a cave, for example, might be in combat and on the other cohabiting peacefully, which could be interpreted, said Raphael, as "ceremony of reconciliation between two clans." Furthermore, this practice of magic "without question" was undertaken on the basis of a material need "to feed, clothe, shelter, and defend against all attacks a society of a given size with given means of production in given natural surroundings." That is, magic was a "compensation" for human weakness in the face of the physical superiority of the animals, and it also allowed humans to kill and eat them, which was an experience of strength, not weakness. Since the killing was done by many hands, "the hand was *the* instruments of magic," testimony in favor of which was found in the handprints on cave walls. Raphael also discussed the significance of hands in his account of handmade Egyptian pottery.

More precisely, Raphael argued that the formal groups of animals in an artistic composition expressed *human* social relations. "Then as today," he said, "man was both part of nature and opposed to nature." But his opposition to nature, namely, hunting, required several hunters and a magic-based organization to conduct the hunt. "We know nothing about this organization except what a correct understanding of the works of art that we still possess can reveal to us." What the art "first" told us was "that man represented his social unity as a group by animals" and that the number of such groups was small because the kinds of animals—"clan animals"—were few. Raphael explained the recurrence of the same animals in different caves as a result of population migration akin to the settlement practices of Greek cities, by which he presumably meant that the clan and kinship structures of colonies were continuations of those of the Greek "mother" city. His general point, therefore, was that social organization was not represented by humans but by animal images, which "is the fundamental character of totemism."[96]

Paleolithic art, like all art, was to be understood as "the translation of historical situations into the language of visible forms." Raphael repeated his argument that art was "the creative act" that gave "the material and ideological life-contents of a

concrete society adequate visible forms. . . . More precisely, art has historical roots that lie outside it, and it has historical consequences that again lie outside it. Art as such is not a historical act but an act of creating values," not in a Nietzschean sense, but in light of an image of perfection, which was suggested above in this section as being akin to a Platonic idea. Later Raphael remarked that art constituted a more or less autonomous world of more or less autonomous forms, a world that drew its life from itself and was adequate to its contents. The first attribute meant that, as in *The Demands of Art*, art "rests upon the fundamental assumption that the outer and inner worlds, the object and the soul, natural and social compulsions, achieve unity in an autonomous element of form that unfolds spontaneously and methodically from a theme both concrete and universal into [a] self-sufficient artistic creation." The second attribute meant that "paleolithic art did succeed in perfectly expressing the paleolithic world."[97]

Raphael also argued that the proportions and ratios of the animal images were established by the proportions and combinations of proportions of the human hand. This discovery led him to reemphasize the significance of the hand, an argument resumed by Leroi-Gourhan. The hand enabled humans to translate their superior consciousness into practice against animals; it enabled humans to make implements and weapons to give them power over animals and other humans. "The hand was the organ that enabled man's spiritual and physical forces to strive outward." Paleolithic man took for granted the formal analogy of animal and hand along with their functional heterogeneity:

> During the paleolithic age the animal was the measure of all things—but only through the intermediary of the human hand. Animals had forced man to follow them through valleys and mountains in search of food, before man was able to pen and protect the animals and thus dominate and exploit them, without killing them. Between these two stages man had emerged from his zoological enslavement of animals and "laid his hand upon them" both magically and artificially. When the artistic imposition of the hand followed the magical one, a higher stage of human emancipation was achieved. Man began to experiment with his power, he was no longer subjected to the animals, but he was still subjected to his own spiritual means of domination over the animal world. And everything indicates that this

subjection was complete.[98]

Raphael put his interpretative approach into operation with an account of the bison ceiling at Altamira (see image 5). "The bison at Altamira," he said, "are obviously in contradiction with themselves and can only represent human beings who have become conscious of their internal antagonisms." The ceiling also showed "that these men had the strength to master such antagonisms, at least in the synthesis of the artistic process."[99] That is, the Altamira ceiling represented human affairs, first of all, but second, the affairs so represented showed both antagonism and the reconciliation of antagonism.

Later in the book he elaborated his interpretation. A "single conception" underlay the imagery on the ceiling: "This conception is represented by an equally unified composition." Most obviously "the unity of subject-matter on the Altamira ceiling, as is usual in paintings of battles, lies in the very disorder which was mistakenly interpreted as showing the absence of unity." Of course battles *look* disorderly, but careful analysis could reveal the order of the imagery. Specifically with Altamira, the conflict was a "magic battle" between the bison and the doe or hind, which for Raphael symbolized feminine wisdom, as was the reconciliation: "We have here both the magic of the eye and the actual struggle which terminates this left and slantingly situated wing. It is entirely filled by the contrasts between the hind and the bison, between femaleness and maleness, long-legged mobility and massiveness, majestic tenderness and self-obstructive weight. The fact that two enemies are pictured here is proved by the pictured attack . . . in this initial stage there is no question that the hind possesses a greater magic power as opposed to the great physical strength of the bison."[100] Other elements of the composition portrayed other "phases of combat and flight," including the wild boars at the left and right extremes.

Looked at as a whole, the entire composition may represent "a hunting spell that the hind clan is casting against the bison or a conflict between two clans, which have the bison and hind as their totems." Raphael thought it was the latter, but he mentioned the possibility of "two different powers within one clan: the spirit of magical power and the spirit of physical power." Assuming the imagery represented the historical opposition of two clans, he then argued that the opposition had been "transformed" into the aforementioned conflict between

"feminine tenderness and masculine bulk," between spirit and physical force; "the hunting and fighting ideology of the early paleolithic period has become the conflict between spontaneous action and broken will; natural and historical facts have been transfigured to represent the power of Being, its constancy and change, the tragic break in human life."[101]

The four seated bison on the right added to the persuasiveness of this interpretation (or to the validity of his assumptions) if they were seen as images of propitiation, or images of animals/humans conducting a "ceremony of propitiation." Propitiation was a historical action that in this instance, Raphael said, expressed the regret on the part of the hinds for defeating the bison. To be sure, the Altamira ceiling may represent a "world out of joint," an experience that was deeply felt, for otherwise there would be no need for the fourfold propitiation.[102] But propitiation still did not dispel the dominant opposition between the short-legged, massive, dull, frightening but impotent bulk of the bison and the long-legged, running, spirited, majestic conscious gracefulness and tenderness of the doe. Moreover, this opposition was expressed formally: "The proportions fix the distances, concentrate everything around the hind, articulate the groups in the whole, while the positional relations insure the victorious superiority of the hind."[103] Other formal elements of Raphael's analysis included the geometrical form of the whole composition as was expressed in the distance between the two hostile leading animals being equal to the size of the victorious doe, or the "guardian" positions of the wild boars. Likewise, the crowding and dispersal of the bison represented the "spiritual life" of the Paleolithic people. Raphael concluded that the composition constituted "a solemn procession of bison" that having been weakened by the spiritual power of the doe, surrendered to it.

This brief account of Raphael's work provided something of the flavor of his argument. It was more complex than could be indicated here and deserves more attention from paleoscientific specialists in order to be understood and evaluated properly. Despite Raphael's complex interpretive sophistication as compared to that of Breuil, so far as I can tell, just about every one of his interpretations and assumptions has been contested. It is not hard to see why. The discussion of Altamira as a magic battle, for example, as a sympathetic Chesney observed, was

"intricate and brilliant, but to this day I do not know how to evaluate it." Similarly, Raphael's hypothesis of a totemic social organization to Upper Paleolithic society "has never been confirmed by archaeological research. It remains an open question for investigation."[104] On the other hand, it is hard to see what *archaeological* evidence might confirm or disconfirm this hypothesis. That is, it was a heuristic assumption to be judged on the insights it brought to light. Likewise, the relatively simple notion he defended, namely, that Altamira was a composition, has been challenged on the grounds that later studies indicated that the several elements were produced or painted at different times. Considering that it remains very difficult to establish a timeline for the paintings, such an observation may also be of very limited value; considering that a composition could still be a composition even if its constituent elements were created at different times, such an observation seems to me to be superfluous.

According to Chesney, "his [Raphael's] interpretation of cave art actually made other scholars angry" because of his confident tone and presumed authority that derived from his Marxism. "Was he imposing 'class struggle' on paleolithic hunters?" she asked.[105] So far as I can tell, the rejection of Raphael's interpretation was simply a rejection of "the brave hypothesis" by which he wanted to be judged, namely, that the philosophical anthropology of Hegel and Marx might provide interpretive insight into Paleolithic art and mythology.

So what, then, did this "brave hypothesis" reveal? First, it connected the signs of the caves to human gestures, especially the opening and closing of the human hand, "the central organizing device for proportions and spatial compositions" of the animal imagery. Second, he said, the lack of a "base line," which was why the animals seemed to be in midair, "corresponded to the experience of wandering nomadic tribes and the palimpsest [or overmarkings of so many engravings] to the experiences of seeing the animals in herds and hordes." That is, Raphael connected what he took on commonsensical grounds to be the life experiences of Paleolithic humans to the kinds of figurations they produced in the cave images. He did so, moreover, on the basis of "formal analysis and compositional relationships." He then pushed his interpretation beyond these formal considerations and asserted a meaning for the symbols, namely, that they composed a totemic social order and a magic of regeneration. That is, it was

not a question simply of hunting and fertility magic. Rather, "Raphael saw animals as symbols for men and social groups faced with the struggle for individual and collective survival."[106] Looking for any hard proof of Raphael's interpretation is clearly inappropriate; it was not, however, a wildly implausible narrative and might have provided paleoscientists with a perspective worth examining in greater detail. That is, Raphael's philosophical anthropology led him to make some bold interpretations of the Altamira documents. But he lacked the expert knowledge of other cave art, much as the paleoscientists lacked an awareness of the insights to be derived from a coherent philosophical anthropology. It seems to me unfortunate that the specialists in cave art were unable or unwilling to develop or adapt Raphael's arguments rather than simply pronounce them brilliant but useless.

Of course, Raphael's ideological commitments led him fondly to hope that the end of World War II would be followed by the replacement of monopoly capitalism with ecumenic socialism. Such a political attitude also led him to consider contemporary primitive societies as "outside" the dialectical movement of history. As Hegel said of Africa, what was soon to be called the "Third World" (yet another Marxist locution), belonged to geography, not history. In less condescending language, Raphael saw primitive contemporary societies as being overwhelmed by technology so that their achievements amounted to the creation of elaborate magic superstitions and fantasies, tributaries of "false consciousness" that Marxists call "ideologies."

A final reason for his being ignored by so many members of the paleoscientific community, even if his interpretations did not provoke anger, was that he "went further than anyone before him in attesting that the value and beauty of this earliest art cannot be conceived without an emotional base in the producing artist. Therefore he insisted that the observer-scientist must necessarily deal with the subjective elements that less experienced quantitative 'scientists' may wish to ignore."[107] Raphael seemed to have been resigned to having staked out a minority position. In a letter written in the spring of 1952, he wrote, "The yes or no of colleagues and specialists is without importance if the research results have some value. They will be judged in fifty years. What one does in the present, aside from research, is to revolve in the void, but that will change."[108]

Paul Bahn offered a typically balanced and judicious

appraisal. Raphael "rejected the straight-line development from simple to complex, from abstract to naturalistic" on the solid empirical grounds, for example, that Egyptian decorations on pots were far more primitive and abstract than were the earlier Paleolithic images. Instead he "saw an infinitely complex expression of different ideas and content being developed over time," which was fully in accord with his unorthodox Marxist anthropology. Instead of looking at individual images he found "panels and compositions, and, for the first time, envisaged a sexual symbolism" in male and female "signs" and the representation of male and female in specific animals.[109] Raphael's influence on Laming-Emperaire and Leroi-Gourhan was particularly significant because between the mid-1950s and mid-1960s, they changed the course of the study of Paleolithic art. It began in 1951 when Raphael sent Laming-Emperaire a typed copy of his notes on "The Iconography of Prehistoric Art."[110]

The Structuralists

The title of this section refers chiefly to Annette Laming-Emperaire and André Leroi-Gourhan. Many of the scholars who followed Laming-Emperaire in their accounts of Upper Paleolithic paleoscience have used the term "structuralist" to describe these two scholars when they extended their surveys beyond the period covered in Laming-Emperaire's *La Signification*. Some of these authors link this later work to that of Raphael, who was usually identified as a pioneer of structural analysis or as a structuralist *avant la lettre*.[111] It is possible to recast the question of structuralism in any number of ways,[112] but for present purposes it is sufficient to begin with the summary remark of Claude Lévi-Strauss: "Science has only two ways of proceeding: it is either reductionist or structuralist."[113] Neither Laming-Emperaire nor Leroi-Gourhan was a reductionist so, *sensu lato*, they might as well be considered structuralists.

Such a broad understanding of structuralism, it seems to me, was both what these two scholars had in mind and how they practiced their interpretation. Consider this relatively late remark of Leroi-Gourhan: the "exceptional particularity" of cave art was that "the works have remained in the place where the artist created them in often good and occasionally miraculous conditions of preservation. The figures that were engraved,

sculpted or painted must have signified something, even if they seem to have been produced without any apparent order. Simply looking at several of the parietal assemblages leaves one with the impression that the significance of the groups of figures would clearly emerge in response to the right questions."[114] A first step in asking the right questions would be to begin with the right assumptions. The most important of these, for Leroi-Gourhan, was that despite the well-marked character of regional styles of art, there was "an underlying cultural unity" that was expressed in all the decorated caves.[115] That is, though separated by great distances in space and millennia in time, the category of "Paleolithic art" was nevertheless meaningful. No one would mistake the art of Chauvet, Altamira, or Lascaux for that of Miro or Michelangelo. Moreover the endurance of symbolic figures—a horse or an aurochs, for example—did not imply that the image retained the same meaning, no more than the cross meant the same thing to Catholics and Nestorians.

A second assumption, which was initially made by Raphael and then justified by his narrative of interpretation, was that the cave art constituted a composition. That is, these two scholars assumed that the wall images were deliberately selected and placed in specific locales inside the cave. The images were not therefore independent of one another. Rather, whatever intelligibility that could be found was a consequence of the interrelation of the several individual images that decorated the cave walls. This meant that the interpreter could look for relations among the images as if the ensemble constituted something like a "text," a "system of signs," or a "mythogram" that in turn was governed by a "syntax" that ordered the symbolism in one way rather than another. Moreover, as others have argued, the topography of the cave also contributed to the composition; Leroi-Gourhan called it an "active participant." None of these assumptions, it seems to me, was wildly implausible. At the very least we may expect interpretations based on them could raise new and interesting problems and questions.

Annette Laming was born in Petrograd in 1917 and grew up in France. She received her BA (*licence*) in philosophy in 1937 and began studies in biology that were interrupted by the war. During the war she taught school in Toulouse, acted in the Resistance, and later joined the French army. In 1944–45, she served in

Displaced Persons camps in Germany. After the war she resumed her studies at the Sorbonne as a student of Etienne Souriau, a philosopher whose chief interest was aesthetics. Because her interests led her to the study of Paleolithic art, he suggested she work with André Leroi-Gourhan, whom she had known for several years and who was happy to accept her as a student and later as a collaborator. Her focus was on the context rather than the content of the cave art,[116] and she proceeded by making detailed and complex diagrams and exhaustive inventories of cave imagery, noting the sex, number, species, and position of the animals and their relation to signs and hand prints. Her thesis, *La Signification de l'Art rupestre paléolithique*, from which we have already quoted, was begun in 1948 and finished in 1957. Revision of the thesis for publication was then interrupted owing to a serious accident and then by a fire that destroyed the manuscript, which entailed a lengthy rewriting.

Before finishing her thesis, Laming had already started a creative and productive career of scholarly writing. When the first photographs of Lascaux were published in 1948 she provided the accompanying text. A few years later she wrote a popular account of the Lascaux cave images.[117] In 1960, she became an assistant professor (*Maître-assistant*) working with Leroi-Gourhan at the Sorbonne, and in 1966 she was director of studies at the École Pratique des Hautes Études (EPHE). She married José Emperaire and collaborated with him in archaeological work in South America until his sudden death, when a wall collapsed on him during an excavation. A few years later she died, also in South America, when a shower heater malfunctioned.[118]

The thesis was divided into four parts. Part 1, "Paleolithic Cave Art," provided a description of facts regarding cave art largely based on Breuil. Specifically, Laming-Emperaire noted that the animals represented were (1) hunted because they were tasty (horses and aurochsen); (2) because they were dangerous and so had to be destroyed (lions, rhinos, or bears); (3) because their skin, ivory, or bones were useful; and (4) for some other unknown reason (such as totemism) about which paleoscientists might only speculate. She also noted, as had others, that there were few representations of jackals, wolves, seals, reptiles, birds, fish, or insects. There were very few instances of context or framing with vegetation and the subjects were grouped together in specific ways often using the physical properties of the caves to provide organization.

Part 2, “Hypotheses and Theories on the Significance of Paleolithic Cave Art,” discussed previous efforts to interpret the imagery. This “review of the literature,” to which several references were given in previous sections of this chapter, became a model for many subsequent overviews of the history of interpretations of cave art. Indeed, part 2 was a model for the analysis of one aspect of French intellectual history. She ended her account with a “Critique of the Theories” she had analyzed. All the efforts at explanation of cave art, she said, had been criticized on compelling grounds, usually because they all began from the same starting point: “Cave art is sacred. The decorated caves are very ancient sanctuaries where rites and ceremonies took place in which the game familiar to Paleolithic hunters played an essential role. But regarding the nature of these ceremonies and the beliefs to which they were tied, we know nothing.”[119] Assuming that was true, the next question was obvious: How to move beyond this impasse? One way or another, she said, it would have to involve the abandonment of ethnographic analogies.

Part 3, “A Method for the Study of the Significance of Paleolithic Cave Art and Its Application,” contained Laming-Emperaire’s own original argument. The “method” consisted in her establishing criteria of significance, which began by creating a comprehensive inventory classified by time and space.[120] Second was a technical study of how the art was created, and third was an interpretation of the composition that included all the images of any particular cave. Laming-Emperaire’s argument regarding interpretation was the most interesting for our purposes.

“The significance of a human fact,” she said, “cannot be understood save by way of sympathetic consciousness. We cannot grasp the consciousness of another except by analogy with our own consciousness, or by an entire series of intermediaries (children, primitive humans, etc.) that finally ends when we confront ourselves.” Eventually, that is, we must rely on our own imagination to understand an image, a word, or a text. This procedure became increasingly unreliable as the text or image grew more remote in time. Eventually we find only ourselves in what we see on a cave wall that has been there for 30,000 years.[121] Accordingly, it was futile to rely on such abstract categories as “beauty,” on a priori “theories,” or on analogies, “the weakest of all ways of reasoning,” that were made weaker

still because of the great remoteness in time of the subject matter. Specifically, analogy with modern or contemporary primitive peoples led only to hypotheses that could not be verified, even when modern social science techniques led to a better understanding of how primitive societies functioned.[122] All that remained, therefore, was archaeological research for which no living realities existed with which archaeological artifacts might be compared.

That meant chiefly looking at a properly classified inventory, but on the basis of well-justified criteria of significance, namely, (1) context, such as the position of the image in the cave—at the front or deep inside, for example, or whether it was surrounded by signs or pierced by "arrows," how large it was, whether the image was of a real or imaginary creature and so on; and (2) the subject matter or content, the style used to make it, what images were nearby or associated with one another, and so on. "Now," she said, "nothing is more illegitimate than arbitrarily choosing such and such a characteristic and interpreting it in isolation." Rather, characteristics and images must be studied as part of a complete inventory so as to constitute a "cultural unit."[123] The "application" of the method thus summarized (and described in chapter 9 of her thesis) considered first the sculptures and deep engravings found in rock-shelters in southwestern France and then the parietal art in Lascaux cave.

By looking at these figures as the result of a deliberate composition, she confirmed Raphael's insight by providing detailed evidence to support his more general narrative. This work and that of her supervisor, Leroi-Gourhan, Bahn said, changed "irrevocably the way in which we think about Paleolithic art. The images could no longer be seen as simple representations with an obvious and direct meaning; instead it was realized that they were full of conceptual ideas—they were the means by which the artists expressed some more metaphysical concept."[124] She was confident her work would change things. "Science never progresses step by step," she wrote, "but always by successive leaps."[125] Even so, her own conclusions were more modest.

It was too early, she said, to come to any definite conclusions regarding the themes she developed. They may be mythical and express the relationship of a particular group with animals; they may express in imagery an ancient cosmology where humans and animals occupied their assigned places and sexual divisions

played a fundamental role in the cosmic order; they could be religious images that established contact with supernatural being(s); they could be all of the above at once and have nothing to do with modern distinctions. There were still many uncertainties to be resolved and lacunae to be filled in, but one thing was clear: she had moved the interpretations of cave art beyond the notion of magic and toward a conception of art that was richer and more complex and was filled with new significance. By way of this interpretation of more or less familiar art, we could glimpse the outline of a world heretofore unsuspected, "a mythical world already rich with tradition that was, no doubt, preceded by other traditions lost forever." For the first time in the history of humanity, artists left on the rock walls of caves "their conception of what represents man on earth, and their attempt at placing themselves in the great animal adventure that was being played out all around their encampments. Seeking to decipher this first Treatise of Nature remains worthwhile."[126] She continued to address these problems over the next several years while Leroi-Gourhan "confirmed the notion, extended it to all major caves, and continued to develop the idea" of compositions of images.[127]

André Leroi was born in 1911 in Paris. He and his younger brother were orphaned when their father, who served in the navy, was killed in the opening days of the Great War. They were raised by their maternal grandparents, and André adopted their surname. Leroi-Gourhan left school at age fourteen, worked in a clothing store (*bonnetterie*) and a bookstore and considered himself a "certified dunce" (*cancre reconnu*). He prepared for his baccalaureate on his own, without benefit of a lycée. Paul Boyer, a "fisher of men" and head of the École Nationale des Langues orientales vivantes, recruited him in 1929. Two years later he received his diploma in Russian; two years after that, a second diploma in Chinese *and* his *Licence ès Lettres* from the Sorbonne. During the 1930s he studied with the sinologist and Durkheimian sociologist Marcel Granet at the École Pratique des Hautes Études on Siberian shamanism and with Marcel Mauss, who, after 1931, was professor of sociology at the Collège de France, and with ethnologist Paul Rivet, who founded the Musée de l'Homme. Rivet was also director of the National Museum of Natural History and with Mauss founded the Institute of Ethnology. Leroi-Gourhan was, in other words, educated by several of the greatest

social scientists of his day. In 1933–34, he studied in the Department of Ethnology at the British Museum where his "latent" interest in technology was awakened. In 1936, he published his first two books, *Bestiaire du Bronze Chinois* and *La Civilisation du Renne*, both of which looked at technology and material culture as "texts." That same year he married Boyer's daughter, Arlette.

In 1937, Boyer secured his protégé an exchange fellowship to Japan—though at the time he knew no Japanese. Upon his return he was mobilized as a regular soldier, but when his linguistic skills were recognized he became an interpreter in the navy. His operational service in the Mediterranean was brief, and he was demobilized in Toulon following the German victory, whereupon he took up raising horses in the lower Pyrenees. When Philippe Stern left the country to escape persecution, Leroi-Gourhan replaced him as an administrator of the Guimet Museum, which housed a large collection of Asian art, in Paris. He held that position for most of the war along with being codirector of the Cernuschi Museum in the Parc Monceau, which was also a repository of Chinese art. In 1944, he was contacted by Marcel Griaule, also a former student of Mauss, on behalf of Paul Pelliot, a sinologist at the Collège de France and was asked to go to the Château de Valençay in the Loire valley to ensure the safety of the statues of *Venus de Milo* and the *Winged Victory of Samothrace*, which had been removed from the Louvre for safekeeping. At Valençay he established contact with maquisards who were living in the woods around the château. During the German retreat, Leroi-Gourhan and the "maquis de Venus" undertook some railway sabotage and "petites embuscades." For his service in the armed resistance he was later awarded the Croix de Guerre and the Médaille de la Résistance; for his service in securing the Louvre statuary, he was enrolled as a commander in the Légion d'Honneur.

During the war he was also at work on Évolution et Technique, the first volume of which appeared in 1943 and the second in 1945. He received his first doctorate (*Docteur ès Lettres*) in 1945 for "Archéologie du Pacifique Nord" and his second (*Docteur ès Sciences*) in 1954 for "Les Tracés d'Équilibre mécanique du Crâne des Vertébrés terrestres," both of which were accompanied by a "Complementary Thesis" akin to the Germans' *Habilitation*. Following the Liberation, he was appointed a lecturer at the University of Lyon in "colonial ethnology." He

continued to reside in Paris and to work his way up the complex postwar cultural, academic, and administrative apparatus; at one point he held posts at the CNRS, the Cernuschi Museum, and was assistant director at the Musée de l'Homme; plus he fulfilled his teaching duties at Lyon and the Institute of Ethnology. In 1956, when Griaule, by then professor of ethnology at the Sorbonne, suddenly died, Leroi-Gourhan was appointed to his chair. During the 1950s, Leroi-Gourhan developed his own interpretations of cave art that, like the interpretation of his most gifted student, Laming-Emperaire, contrasted markedly with that of Breuil. Between 1969 and 1982, he was professor of prehistory at the Collège de France, and, following a lengthy illness from Parkinson's disease, he died in February 1986.[128]

Leroi-Gourhan was a brilliant, audacious, even eccentric scholar. He made two major contributions to conventional archaeology. The first was his pioneering work in a novel method of excavation of archaeological sites that focused on what are now called occupation floors or occupation areas. This procedure allowed archaeologists to discover patterns of spatial distribution of artifacts at the same level rather than undertake a conventional vertical stratigraphic dig through several levels.[129] He developed this much more labor-intense procedure of excavation in part because he considered an archaeological site akin to a book that could be read only once: "With a manuscript, one can go back and ponder again a passage already read. On the other hand, the earth is a book whose pages are destroyed as we turn them; we can read it only once in its original text; when the earth of the layer is taken out, all that has not been carefully transcribed is lost forever."[130] A second major contribution was the concept of *chaîne opératoire*, "operational sequence." Leroi-Gourhan introduced the term to replace the concept of "reduction sequence," which was conventionally applied to flint-knapping. The new concept could be applied to basketmaking, ceramics, metallurgy, or, indeed, to writing a book such as this, because it did not imply a subtraction of material, as occurs in flint-knapping.[131]

Before considering Leroi-Gourhan's analysis of cave art, one further preliminary remark. Granted that "it is impossible to overestimate the influence that Leroi-Gourhan has had in French academic life,"[132] it is also not always easy to document that influence in detail. As Audouze said, "Acknowledging innovations or ideas of other prehistorians was not one of Leroi-Gourhan's

traits."[133] This is why, for example, one seldom encounters the name of Bergson, "though it is obvious to everyone acquainted with philosophy that he came under Bergson's influence."[134] Likewise, Tim Ingold noted that "the most outrageous feature" of his "masterwork," *Gesture and Speech*, "is its author's almost total disregard of the work of anyone else."[135] Even Mauss was surprised at what Leroi-Gourhan produced under his supervision. Upon reading *La Civilisation du Renne*, Mauss remarked, "I feel like a hen who has hatched a duckling."[136] One further reason Leroi-Gourhan was difficult to analyze was that he combined a wide-ranging interest in what he called "the human phenomenon in its totality" with a reluctance to explain the origins of his concepts.[137] Leroi-Gourhan was aware of his own status as a duckling among chickens: "I am in no way a philosopher. . . . I am above all a biologist."[138] In a similar vein, Lévi-Strauss observed, "His thinking was always to study the interrelations among things rather than the things themselves, to try to reduce the chaotic diversity of the empirical data to invariant relations."[139]

In 1964 and 1965, the two volumes of *Le Geste et la Parole* appeared, and thirty years later an English version, *Gesture and Speech*. Over the course of 600 pages (in French; 400+ in English), Leroi-Gourhan elaborated a kind of philosophical anthropology that he had already applied in his studies of technology and of Paleolithic art. For the most part, his style was that of ordinary academic prose, though on occasion his writing resembles one of Marshall McLuhan's "probes."[140] The first chapter, "The Image of Ourselves," outlined his approach to "human origins." In keeping with his interest and training in paleoscience, he was chiefly concerned with the biological and technologic foundations of our humanity. Specifically, he argued that the "first and most important" of the "criteria of humanity" was an erect posture, which entailed two additional criteria, "a short face and a free hand during locomotion." The former implied changes in teeth, brain volume, and so on; a free hand implied a technical activity distinct from that of apes. In place of fangs, that is, humans developed portable tools. In short, an erect human posture established a condition, unlike that of apes, that led to a unique neuropsychological development. Accordingly, humans represented "the last known stage of hominid evolution and also the first in which the constraints of zoological evolution had been overcome and left immeasurably far behind." More

succinctly, “Tools for the hand, language for the face, are the twin poles of the same apparatus.”[141] In short, human evolution depended primarily on changes in our feet rather than changes in our brain because an upright posture and its associated rhythms of movement entailed and permitted changes in our brains.[142] As he put it in a later book, “Instead of this monkey with the large brain that would have progressively acquired an upright posture, we found instead man with a small brain but who was upright, like contemporary man.”[143] And an upright posture eventually made all the difference.

The early part of *Gesture and Speech* was devoted to elaborating a bioanthropology. This was followed by an account of the development of the social body whose diverse ethnic groups were maintained by distinct collective or social memory, which in turn had feedback effects on technical and linguistic history. As Leroi-Gourhan put it, when the social group rather than the species became the primary locus of human being, the “transition” from the zoological to the sociological was complete. This “liberation,” Leroi-Gourhan said, externalized what for other species was achieved by Darwinian species’ adaptation.[144] Indeed, as Ingold said, the shift from zoology to sociology achieved “freedom of a kind *from* nature.”[145] It seems to me that when Leroi-Gourhan discussed tools and techniques less as the product of thinking and more as the “incorporation” of the organism, he was struggling to find a metaphor to express what Lonergan called “emergence,” which we discussed in chapter 1. That is, in the same way that the hand tool was “the instrument of liberation from genetic constraints,” language, which was the condition for what he called “lucid consciousness” or, more broadly, intelligence, was “the instrument for liberation from lived experience.”[146] Once again, it seems to me, Leroi-Gourhan was searching for a concept such as emergence to bridge the conventional opposition of instinct and intelligence, which was also a problem discussed by Bergson.[147]

A third part considered the rhythms, aesthetics, and “values” that constituted the “personality” of distinct groups by way of specific symbolic activity; he concluded by reflecting on the balance between the individual and the society within which he or she lived and offered a few ex cathedra remarks on the possible future evolution of humans now that the constraints of zoological evolution had been left immeasurably far behind. Because of his inability to develop a philosophical notion of

emergence (or anything else equivalent to it), his understanding of "nature" remained zoological, and it was never transformed through his understanding of human being to anything like the Greek philosophical term *physis*, which existed in contrast to *nomos*. Nevertheless, Leroi-Gourhan did struggle with the problem. Building on the arguments describing the "material essence of humans" or the hand/tool complex, starting in chapter 6 Leroi-Gourhan changed his focus to the face/language complex and the capacity of humans "to express thought in material symbols."[148] In this new context the face was paired with "reading" and the hand with the ability to produce "graphic signs" or "writing" *sensu lato*. As Marie König also noted, "If there is one point of which we may be absolutely sure, it is that graphism did not begin with naïve representations of reality but with abstraction," eventually followed by "the slow rise of realism."[149] This kind of abstraction, unlike the abstraction of "modern art," which came *after* representative or realistic art, Leroi-Gourhan argued, was closer to "writing" than to what we mean by art. "It was symbolic transposition, not copying of reality." The earliest paintings therefore did not represent anything but constituted the graphic support "of an irretrievably lost oral content." Later he argued that prehistoric art, when statistically analyzed, seemed to indicate "a mythological scene in which images of animals and representations of men and women confront and complement each other," a statement he defended in detail in *Treasures of Prehistoric Art*, first published the following year (and to be discussed below).[150] To be more precise, later Paleolithic art constituted a mythographic scene, because it was based on the manual capabilities of humans, rather than a mythological scene based on their verbal capabilities. The geometry of such graphism, as Raphael had already argued in his discussion of Altamira, is "radial, like the body of the sea urchin or the starfish" with an initial point of reference, an *omphalos*, around which the cosmic meaning gravitated.[151] In contrast, the geometry of writing was linear. In short, Leroi-Gourhan saw the problem that Raphael, so to speak, had already solved. But at least he saw it.

Préhistoire de l'Art occidental (1965) is another big book, 480 pages in French, 543 in English. Each version is filled with hundreds of beautiful color plates and black-and-white photographs taken by Jean Vertut.[152] The project began in 1956

when Leroi-Gourhan's longtime friend and French publisher, Lucien Mazenod, brought a vague decade-old notion into focus: "Do the book as you see fit," Mazenod said. "I'll see to its publication." Having first assimilated the available literature on the caves and cave art, starting in 1957 and continuing over the next several years, Leroi-Gourhan and his team visited all the known caves and rock-shelters in France at least once. Many they visited more than once. On the basis of the previous work done on the cave art and discussed at length by Laming-Emperaire, Leroi-Gourhan began with conventional expectations. "But I did not find the cultural chaos I was expecting . . . rather, I was impressed by the unity each of the sets of figures embodies."[153] He quickly realized that he and Laming-Emperaire were on the same track, but "we decided not to be influenced by each other," and so they pursued their research independently until Laming-Emperaire published her thesis.

Despite the relatively large size of the sample he used, Leroi-Gourhan was very much aware of the practical problems of analysis. The first and most intractable concerned dating the art; the second was developing a way to investigate the relationships among each instance of the historical evidence and every other instance. He tracked this problem by "the simultaneous study of chronology and content" of the imagery and the development of a method that "might lead to the formation of new problems."[154] "The only suitable tool for this sort of factual survey and analysis," Leroi-Gourhan said, "is the punch-card tabulator and sorter, which facilitates the handling of large quantities of evidence," which was transformed into data, and which "at the same time assumes the objectivity of the dialogue between the latter-day scholar and the prehistoric artist."[155] Before considering the problem of chronology directly, Leroi-Gourhan set himself another task, to discover what was the "armature of traditions," which I take to mean "structure" in the broad sense outlined above, that might "underlie a superstructure of figural representations at once so stable and so complicated." Staring at the images by themselves could not provide an answer "because *in situ* they are like pieces of a scattered jigsaw puzzle, each yielding only one element, which cannot by itself be related to the whole."[156] Hence the need to look at sequences in order to discover the animating thought expressed through the imagery.

As early as 1947, Leroi-Gourhan began collecting data and entering it on punch-cards. He "gradually became aware of

repetitions—certain animals turned up next to each other too often for such associations to be explained only as chance." He then went on to reconstruct entire caves as Breuil had done, "and I became sharply aware of the repeated occurrence of bison next to horses, of stags and ibexes in the deepest parts of the caves and of the short strokes at both ends of the caves." Moreover, Leroi-Gourhan several times remarked that his discovery was confirmed by Laming-Emperaire: "The cave-wall pictures were real compositions, not the casual additions that Paleolithic hunters had made over the course of millennia." His data analysis enabled him to construct a Weberian ideal-type, which he called "the ideal Paleolithic sanctuary." It was divided into "topographical divisions" based on variations underground such as narrow passages, bends, and connecting passages as well as the entrance and the back of the cave. Where possible Leroi-Gourhan detected "panels" composed of more or less homogenous images arranged in terms of central and peripheral groups. This analysis brought to light a "dualistic system" whereby "the signs and animals belonging to one group (A) frame or compliment the signs and animals of group (B) that are all in the main panels."[157]

Leroi-Gourhan summed up his initial argument as follows: "When we walk among these figures, in which we can discern an order but not its meaning, we find ourselves in a situation comparable to that of a Martian visitor wandering through an abandoned cathedral on this planet."[158] Critics have made much of Leroi-Gourhan's identification of the associations of animal imagery with male and female "principles" and have taken some delight in stressing the differences between his divisions and those of Laming-Emperaire. It seems to me this rather misses the point of his (or their) achievement. "There is little doubt," Leroi-Gourhan wrote, "that Paleolithic men were familiar with the division of the animal and human world into two opposite halves, or that they supposed the union of these halves to govern the economy of living beings." Without forcing the evidence into overly rigid categories, he continued, "we can view the whole of Paleolithic figurative art as the expression of ideas concerning the natural and supernatural organization of the living world (the two might have been one in Paleolithic thought)."[159] Leone summarized Leroi-Gourhan's achievement:

> Leroi-Gourhan found that the standard Upper Paleolithic cave contained set statements that life and death depend on each other: that males, weapons, and death-dealing animals are

> opposed to females, animals traditionally hunted by paleolithic peoples, and wounded and dying people or animals. The two fundamental oppositions, one *inflicting* pain and death and the other *suffering* pain and death, are essential to each other in providing life. Thus, Magdalenian logic linked women and wounded bison, horses, and ibex, and counterposed them to men, lions, and bears, while seeing all within a single paradigm, not as scattered unrelated items of sympathetic magic.[160]

It seems to me that Leroi-Gourhan's analysis of "Magdalenian logic" introduced an awareness of evidence equivalent to Voegelin's compact consciousness.

After 188 pages of preliminary argument, Leroi-Gourhan discussed style and chronology. For our purposes this argument and the subsequent documentation of the caves is secondary. Besides, starting in the 1990s, archaeologists began thinking in terms of a "post-stylistic era," thus calling into question the very notion of "grand chronological schemes."[161] Moreover, after the discovery of Chauvet cave, Leroi-Gourhan's chronology looked increasingly questionable, but, just to make matters even more opaque, as we shall see in the following chapter, the chronology of Chauvet was also questionable.

In 1969 André Varagnac wrote with some indignation: "Abbé Breuil died in August 1961. For half a century his teaching had become classic. Now, over a few years, innovations in anthropology and prehistory have taken place that might rightly be termed revolutionary: they are principally due to M. André Leroi-Gourhan."[162] Specifically, Leroi-Gourhan revised Breuil's position on (1) the appearance of humans in his evolutionary sequence; (2) the chronology of prehistoric arts; (3) the usefulness of ethnological parallels; and (4) the magico-religious significance of prehistoric art. Varagnac was particularly critical of the fact that Leroi-Gourhan based his revolution on a relatively small number of caves; worse, he had spent nothing like the "sixty years of patient investigation" that Breuil had done. Because he did not integrate his study of cave art with a necessary study of mobilary art, his investigations of "Paleolithic sexology" were vague, inconsistent, too systematic and yet incomplete.[163]

Nor did Breuil himself view the work of either Laming-Emperaire or Leroi-Gourhan favorably. Shortly after Breuil's *Four Hundred Centuries of Cave Art* appeared (1952), his biographer,

Hurel, noted that "discordant opinions began to be expressed publicly."[164] Breuil rejected Laming-Emperaire's thesis, dismissing her interpretation as a "large blast of wind [*coup de vent*] that cannot but distress me a bit." He questioned her motives in publishing a book on Lascaux meant for the general public—"the sole aim is to collect money." When Laming-Emperaire was a candidate for membership in the Centre National de la Recherche Scientifique (CNRS), Hurel wrote, "the opinion of the Abbé was final: 'I have been asked to facilitate her membership in the CNRS. Is this research? No. It is imaginative and commercial self-promotion. That's what I think.'"[165] As for Leroi-Gourhan, he was preoccupied with sex, "even when it's a matter of bison and horses! And again when it's a matter of signs: they're all sexual, even tectiforms and claviforms." Indeed, Breuil considered that Leroi-Gourhan had adopted the attitude of a "sexomaniac" when he criticized the abbé.[166]

About all one could say regarding Breuil's gracelessness in the face of the "revolutionary" criticisms of Laming-Emperaire and Leroi-Gourhan is that it reflected a generational displacement. For the displaced, whether in academic life or elsewhere, the experience was often painful. For one whom Teilhard called the "pope of prehistory" it must have been particularly unpleasant. When Breuil died, some of Leroi-Gourhan's students greeted the news with "Le pape est mort; vive Leroi."[167] Laming-Emperaire and Leroi-Gourhan may have thought Breuil's contribution was chiefly as a copyist and compiler, but they nearly always wrote of him with respect. "Our own aim," wrote Leroi-Gourhan, "is not to destroy but to continue."[168] Leroi-Gourhan was, however, critical of the way Breuil, along with Blanc and Bourgeon, excavated Lascaux, "a bit like wild boars," with the result that many decorated artifacts remained in the rubble.[169]

Apart from these always fascinating but essentially personal disputes, there were two kinds of scientific criticism of Laming-Emperaire and Leroi-Gourhan. The first pointed to the information that was lost when a "structuralist" approach was used. Instead of categorizing materials by date, place, or other specific and unique attributes, Leroi-Gourhan "ignored all daily context and substituted instead the context of the paintings' relationship to each other."[170] This was true enough, but unavoidable. Moreover, as the two "revolutionaries" pointed out in detail, their approach highlighted information that a focus on individual images ignored. As in other areas of science and

human existence, one cannot simultaneously look at both the forest and the trees.[171]

A second criticism acknowledged the benefits of Leroi-Gourhan's and Laming-Emperaire's approach, but pointed to inevitable lacunae and ambiguities. The divisions of the caves were not always easily delimited so the boundaries of the compositional elements were unclear and so necessarily were the associations of the different animals. There were errors in counting; there were no statistical tests of significance, not even a chi-square test applied to the data, to say nothing of more sophisticated approaches, such as factor or principal-component analysis.[172] Such criticisms, it seems to me, were perfectly acceptable. Moreover, to the extent that these two scholars were "clearing the ground," as Leroi-Gourhan put it, criticisms were entirely to be expected, even welcomed.[173] One might also anticipate that some improvement might be expected when the quaint machinery of the punch-cards and counter-sorters was replaced by computers. On the other hand, whether one can ever formulate unambiguous decision-rules to deal with cave topography may be doubted. Accordingly, the question of the constitution of any particular panel or composition may always remain a matter of judgment and connoisseurship.

In a 1971 *Festschrift* for André Varagnac, who had defended the Abbé Breuil with such vigor, Annette Laming-Emperaire first suggested a "working hypothesis" that might be applied to the cave art—and also might lower the temperature of the debate.[174] She began by rehearsing a by now familiar narrative. In *La Signification* she argued that Paleolithic paintings were compositions, not random collections of images, and that they reflected a "system of nature" that opposed male and female principles, which she thought were symbolized by bovids and equids, respectively. The same general approach was followed by Leroi-Gourhan, who arrived at the opposite conclusions: bovids symbolized a female principle and equids a male one. These contrary findings, she acknowledged, played into the hands of their many detractors. For Laming-Emperaire and Leroi-Gourhan, however, the important discovery was that cave art was a deliberate composition that followed specific rules even if its precise significance could not be decoded. In other words, both considered their differences to be relatively minor compared to the discovery that the cave art was organized.[175] The discovery

of a binary organization moved paleoscience beyond the previous explanation of practical sympathetic magic.

For several years, Laming-Emperaire was concerned with other problems. At the back of her mind, one thing continued to bother her: how to explain the convincing, if not definitive, arguments that the bovid/equid opposition expressed a male/female distinction that obviously existed in nature. One day she experienced the insight that "this opposition could simply be the expression of a social system not of a natural system [*système du monde*]." Thus the bovid/equid opposition was the expression not of male and female but of a social group that contained both sexes. This "rudimentary hypothesis" explained why she and Leroi-Gourhan came to different conclusions. It was also similar to the assumptions made by Max Raphael in his narrative on the significance of the Altamira ceiling and corresponded to the argument made a few years earlier by Mircea Eliade.[176] Unfortunately, she had neither the time nor the expertise in social organization, such as mastery of a social anthropological understanding of complex kinship systems, to pursue her hunch, and collaboration with others who were experts proved difficult. Hence Laming-Emperaire's use of the term "working hypothesis" to indicate the tentative nature of any connection between Paleolithic art and Paleolithic social organization.

Laming-Emperaire was well aware that she was proposing an "enormous task" and so she could only sketch a few dimensions of the problem. First, ethnographic data had been used to suggest that contemporary primitive social organization was similar to the social organization of Paleolithic people. But second was the argument of *La Signification* as well as that of Leroi-Gourhan, on the necessity of avoiding ethnographic comparisons and consider only the internal logic of the cave decorations. As did Leroi-Gourhan, she called this argument a clearing of the underbrush (*débroussaillage du terrain*). But factors other than logic were involved so the result was an awareness only of the incredible complexity of the cave art. Thus the problem remained: "How to engage in interpretations of works made millennia ago within an unknown human context?"[177]

Here Laming-Emperaire discovered a third and previously unforeseen path in the work undertaken by Lévi-Strauss, particularly his argument in *The Elementary Structures of Kinship*.[178] Laming-Emperaire summarized what she considered to be the most useful of Levi-Strauss's insights: (1) all human

societies were based on exchanges—of goods, women, friendship, hostility, and so on; (2) the exchange of women was particularly important because it conditioned the structure of society; (3) these exchanges were made between social groups (such as class, for example) or as a result of kinship relations; (4) the exchanges could be represented diagrammatically where symmetry and reciprocity were fundamental; (5) not only were these exchanges to be found in all *observable* human societies, but they also existed in all *conceivable* human societies.[179]

Granted that prehistoric societies could be directly studied chiefly in terms of their economy, technology, and, occasionally, in terms of their habitation and personal decoration, once one understood that the cave art was characterized by a symmetrical distribution of figures on certain walls or in certain caves, and with an opposite symmetry elsewhere, "one can propose as a working hypothesis that these reversed or alternating symmetries could correspond to social systems." In other words, to the extent that there existed only a limited number of ways of exchanging women, and to the extent that there were a limited number of ways of constructing the compositions of art in the caves, it was legitimate to compare the two and to explore (as a working hypothesis) whether or how the two were connected.

Accordingly, she proposed as a departure point for further research that the observed compositions of animals, humans, signs, and so on, of which Leroi-Gourhan had provided the most comprehensive study, symbolized social relations, and that they outline class, lineages, alliances, and similar kinds of human connections. Laming-Emperaire then set out simplified kinship structures and compared them to the actual complexity of the cave compositions. In three caves, Lascaux, Pech-Merle, and Altamira, "we obtained an extraordinary series where one could read (or thought one could read) the history of matrimonial exchanges going back more than 15,000 years."[180] This did not mean that she was claiming to have understood all the details. On the contrary, she remained skeptical and wary of becoming the victim of an illusion in finding kinship structures where previously there had only been horses and bison, deer and cows. And yet, Laming-Emperaire tried out this working hypothesis on the "privileged example" of the Lascaux compositions—privileged because Lascaux combined almost complete preservation of the imagery with stylistic homogeneity, a major conclusion of *Lascaux Inconnu*. She then sketched several possibilities, and then

concluded that “an enormous analytical task remains to be done before we can know if it must result in something that is unverifiable, that is possible, or that is unlikely.”[181] Her preliminary conclusion was that the working hypothesis was possible.

A year or so later she presented a paper at a symposium in Santander.[182] She began by summarizing the conclusions of Leroi-Gourhan and drew a general conclusion: “This binary organization of images may correspond to a universal system where the opposition and complementarity of male and female play a fundamental role, perhaps along the lines of yin and yang in Chinese thought.”[183] In other words, Laming-Emperaire was suggesting that the binary balances of the cave imagery constituted a complex cosmological symbolism. This, it seems to me, was a major insight. A few years later, Leroi-Gourhan made the same point.[184]

She then listed the main criticisms of the thesis of sexual duality or binary organization: (1) there was uncertainty regarding the duality of the signs that were not explicitly male or female and a consequent reliance on “topographical determinism” such that a sign was masculine (or feminine) because of where it was placed; (2) dichotomy of animals, which was also based on topography, added to the uncertainty; (3) the arbitrariness with which male/female principles were assigned by Laming-Emperaire and Leroi-Gourhan, as evidenced by their disagreement over the assignment of specific principles to specific animals, which led her to repeat the assertion that the animals were more like yin/yang cosmological complementarity than simple opposition; (4) the images in many caves could not be reduced to Leroi-Gourhan’s groups; (5) it made no sense for animals to represent sexes independent of the sex of the animal represented: they were not images of cattle or deer or horses but of bulls and cows, stallions and mares, stags and does.

In light of these problems and objections, Laming-Emperaire proposed a revised working hypothesis based less on a binary notion or sexual duality and more on the notion of a yin/yang cosmological balance expressed through composition. Here she listed several kinds of connections between and among animals and signs leading to a reformulation of her working hypothesis: the composition expressed “a system of combinations or connections (*alliances*) among social groups.” On the basis of this hypothesis, “social groups would be represented by animal

species such that the combination of two males of different species would represent a group connection, the combination of a male and a female of different species would represent a marriage connection," and so on. Other connections and combinations might represent myths of origin or other kinds of exchanges.

Her revised working hypothesis did not lead to a clear and obvious "theory." The complexity of each cave made the simplification necessary to construct a "theory" impossible. And in any event, "it is not a theory that is being proposed here but a direction of research." Before taking the first steps in this research, two things needed to be made clear. First, even if we supposed that cave art did refer to various social exchanges, these systems of exchange would not remain stable over millennia or throughout Franco-Cantabria. The accounts obtained in one era and one cave were unlikely to be identical with those in another era or from a different cave. "It is sufficient that they display a certain degree of coherence."[185]

Her second point was that she thought it highly unlikely that Paleolithic humans were concerned to represent their connections or social organization directly on the rock face. Rather, she said, reverting to an earlier observation, it was more likely that what was represented in the subterranean sanctuaries were myths, perhaps myths of origin, concerning the ancestors who were prefigured in the connections of the actual groups portrayed on the walls. She concluded this section with the observation that we should not expect to see a logical account of a binary system spelled out on the rock face so much as an outline of the appearance of the fundamental structures of a system we sought to discover by way of the anecdotes and accidents of myth.

Laming-Emperaire then reiterated her tentative interpretations or "gropings" (*tâtonnements*) in the context of Lascaux cave and again emphasized the problems involved in moving from the composition of cave images to considerations of social structure. She concluded that the artists were more concerned with telling a story than articulating a coherent or logical system. To reduce the number of variables involved, she proposed analyzing caves that, within the particular stylistic categories of Leroi-Gourhan, were relatively homogenous. She also proposed refining his categories to take account of the sex of the individual animal image, the size of the image, the number of associated animals, and so on.[186] The commentators on Laming-Emperaire's paper praised her for her newfound restraint and for

the methodological caution implied in putting forward a working hypothesis rather than destroying a once respectable but no longer plausible theory. They also noted that she had proposed a very lengthy avenue of research that necessarily would proceed cave by cave. A more or less endless research program seemed to give these distinguished representatives of normal science considerable comfort.

Conclusions

Given that so many of the early discoveries of the decorated caves were in southwest France, it is hardly surprising that French scholars have contributed so much to the understanding of Paleolithic art. The discovery of parietal art in the last quarter of the nineteenth century was coeval with the realization that there was a meaning expressed on the cave walls. Only a few species were represented; sometimes the imagery was nearly inaccessible or incomplete; the animals were often accompanied with signs that had no obvious meaning and yet were there, so they must mean something. Even Cartailhac, so cautious in many respects, sensed that the cave art had a meaning greater than the simplicity of art for art's sake. In his 1902 "mea culpa" article, he allowed that the La Mouthe cave had been systematically decorated.

For the next half century or so, the Abbé Henri Breuil dominated the interpretation of Paleolithic art. Breuil's great contribution as an artist was to make the imagery available to a wider public; his equally great contribution as a scientist was to establish a chronological sequence that remained persuasive for many years. His preeminence also meant that, so long as it lasted, no one challenged his view that the images were essentially *partes extra partes* accumulations devoid of any internal logic or connection. Whatever meaning the caves contained was imported from ethnographic analogies, chiefly hunting and fertility magic.

Max Raphael, an eccentric German exile living in New York, was the first to recover the pre-Breuil insights. His complex theory of the place of art in society—any society—led him to reject Breuil's argument that art evolved from simple abstraction to naturalistic complexity. After the war, first Laming-Emperaire and then Leroi-Gourhan built on Raphael's insights and began to look at the cave art as an ensemble of symbols, not as the portraits of animals.[187] As Leroi-Gourhan put it, the decorated

caves constituted a “mythogram.” He divided the animals into groups and the caves into zones and established correlations among the several categories. Moreover, he integrated several types of signs with zones and animals. However, the kinds of animals present on the walls changed over time; the complexity of the topography of the caves remained a problem (reflected in Laming-Emperaire’s concern about “topographical determinism”), as did such simple possibilities that a Paleolithic cave entrance may later have been closed by a rock-fall. The implication, of which Leroi-Gourhan was aware, was that the number of exceptions and variations to his “ideal-type” cave layout reinforced Laming-Emperaire’s emphasis that each cave was unique and contained a symbolic order existing within a complex context reflecting topography, region, and historical period.

In part II of this book, we characterized Marie König and Alexander Marshack as bold outsiders. Within the more academically orthodox world of French paleoscience, the outsiders still made a disproportionate contribution to the scientific narrative. Sanz de Sautuola’s discovery at Altamira and the rejection of it by the normal science of the day was a classic instance. Raphael’s challenge to Breuil’s orthodoxy was another. Because she was a woman, and had interests in South American archaeology, Laming-Emperaire was less part of the French scientific establishment than was Leroi-Gourhan. But even he was an unorthodox polymath whose interpretive mythographs have not crystallized into a new orthodoxy. With a few exceptions, discussed in the following chapter, this relative openness has ensured that the generation of scholars who succeeded the “structuralists” have, once again, asked new questions and pursued new paths. In the following chapter we discuss one of the most controversial: the shamanic hypothesis.

CHAPTER 6

Jean Clottes and the Shamanic Hypothesis

The Early Controversies over Cosquer Cave

Jean Clottes was born in the French Pyrenees in 1933 and has lived for most of his life in or near to Foix (Ariège) just north of the Spanish border. He attended high school (*lycée*) in Carcassonne and university in Toulouse, where he received his *Licence ès Lettres* in 1954. Clottes then perfected his English as an assistant master at Firth Park Grammar School in Sheffield between 1955 and 1957. In 1959, he began teaching English at the École normale in Foix while also studying archaeology at the University of Toulouse. He received his *Doctorat ès Lettres et Sciences Humaines* in prehistory in 1975.[1] A few years before he earned his degree, he had been appointed director of prehistoric antiquities for the Midi-Pyrénées, which meant he had to become familiar with the work being undertaken in caves in the area.

His first major study was of Niaux cave, which was followed by work on the Volp cave complex, both of which are in Ariège, and then on Le Placard (Charente). By 1992, he had risen to the rank of inspector general for archaeology in the Ministry of Culture and the next year he was the scientific advisor for prehistoric art for the Ministry, a job he retained until 1999, when he was compelled to retire. Despite occasional teaching obligations at Toulouse, Neuchâtel, and Berkeley, among other places, Clottes's career was spent primarily within that part of the bureaucracy given responsibility for what we would call the

prehistoric heritage of France. As a scholar-administrator he published nearly thirty books and four hundred articles and was in charge of the scientific study of two spectacular cave sites, Cosquer and Chauvet.[2]

In some respects, Clottes's position in French prehistorical studies was closer to that of Breuil than to that of Leroi-Gourhan. Two generations earlier, Breuil had been an unofficial arbiter of what would count as an authentic artifact or authentic prehistoric art. The growth of the French state meant that Clottes was more an official arbiter in that he either directed the research on new discoveries or would decide who would. He also determined who would have access to newly discovered sites and under what conditions. Given the large number of qualified researchers, his decisions invariably disappointed many more than they pleased.

The first major controversy Clottes encountered came in the wake of the public acknowledgment of the discovery of Cosquer cave in 1991. Henri ("Call me Barbu," the "Beard") Cosquer ran a diving school at Cassis, near Marseilles. He had been director of the Diving Center since 1980 and had spent many years exploring the underwater caves along the coast. In September 1985, he discovered the entrance to a tunnel about forty meters below the surface. The opening was 1.3 m wide and led to a slightly wider 150 m passage uphill along a 30-degree slope. Cosquer first made his way along this pitch-black passage using a single diving lamp. It takes about fifteen minutes to swim from the entrance to the cave chamber now. The early trips took a lot longer; the first one must have been hair-raising. A few days later he made another solo swim to the cave chamber; a few days after that he brought along his friend Eric Broux. Early in October he again made a solo passage to the cave, and Broux remained in the diving tender.

In late October 1985, Cosquer made his fifth dive, again alone. On reaching the cave chamber he took off his flippers, tanks, and mask, and left all his gear on a sloping rock he called the "beach." He then began to explore, once again, "his" cave, the only noise being made by the squeaky neoprene of his diving suit: "All at once, powerless, I saw my flashlight fade and then go out as it played over a rock. The darkness was total, intense. I sat there, paralyzed with fear." Never did he seem so vulnerable, but the panic was temporary: he still had his backup light. He turned it on but nothing happened. He couldn't believe it. "This is ridiculous. It is mechanically impossible for this flashlight not to

work. I tested it on the surface. This is a nightmare. Wake up, Barbu." Then he realized that the water pressure may have broken the flashlight, and he again broke out in sweat. He was going to die there! Then he remembered that Broux was in the tender and knew where he was.[3]

The hope of rescue had its effect. He grew calm and professional once more. The light flickered on and off. He retrieved his gear, suited up, found the exit, and began to grope his way out down along the long dark tunnel.[4] He had visited the cave five times and had discovered not a single decoration on the walls. He was, however, very impressed with the rock formations and especially the colorful calcite draperies. For the next nearly three years, he spent his time crewing on sailboats and running the Diving Center. He did not return to the cave until September 1988. "Did this constitute a necessary delay for me to get over my dreadful experience? Who knows?"[5] Again he saw no art. His seventh dive, twenty-two months later, was with a Belgian client, Marc van Epsen, who was also a caver. For the first time they used a lifeline (*fil d'Ariane*) anchored outside the entrance to the tunnel. A year or so later they returned and fixed a more permanent lifeline from the entrance to the cave. Then, on July 9, 1991, on a dive with several friends, he was amazed to see a red hand stenciled on the wall. At first he thought it had been left by another diver. Then they discovered the other engravings and pictures. Three weeks later, again with friends, including this time Jean-Claude Cayol, they took photographs; two weeks after that they took some videos.

Cayol sent a postcard to Jean Courtin, a Neolithic prehistorian with the Centre national de la Recherche scientifique (CNRS) in Marseilles, who was away on a dig. Cayol, who had often dived with Courtin, said they had made "a beautiful discovery," but provided no details. Cayol later discussed the discovery with his friend Jean-Pierre Bracco, then a graduate student and later a professor of prehistory. Cayol subsequently persuaded Cosquer to present the information regarding his discovery to the authorities. Cosquer knew that once he told the state officials of the cave and showed them the photos he had taken, it would no longer be his private place of refuge. They may call it Cosquer cave, but he would have to share it with the world. "Are you a little reluctant, Barbu?"[6] He was.

During August, and before Cosquer said anything officially, news (or at least rumors) of his discovery circulated among the

local diving community. On September 1991, four divers from Grenoble, who may have been unaware of the danger involved in transiting the passage to the chamber, discovered the entrance to the tunnel and tried to make their way in. They had inadequate lights and air tanks. Worse, they did not use a lifeline. As a result, when their flippers stirred up the sediment they were effectively blind. Three of them drowned. Henri Cosquer was one of the team that found their bodies.

Two days later, Cosquer took his photographs and videos to the Maritime Affairs Office in Marseilles. Despite the photographic evidence, the officials didn't know what to make of his story. "I was just a file to them, to these bureaucrats," but not a normal one. They had had plenty of experience dealing with Bronze Age and later artifacts, and lots of forms to deal with such discoveries, "but none for caves decorated with paintings on the walls."[7] Eventually an exasperated Cosquer told them to open their eyes and listen to his account. They did, and sent the evidence up the chain to Paris, where it at length came to the attention of Jean Clottes at the Ministry of Culture and later to Cayol's friend Jean Courtin. The photos seemed to be authentic since several of the paintings looked to be covered in calcite, but it would be necessary for an archaeologist to visit the site in person to confirm or disconfirm the evidence. On Clottes's recommendation, that became Courtin's job. He was supported by assets from the Directorate of Underwater Research (DRASM) and the support vessel *L'Archéonaute*. "Voilà!" wrote Cosquer, "it's official. The self-taught Barbu is going to deal with the attention and perhaps the sarcasm of the big-shot scientists." But the friend of his friend Cayol, namely Courtin, turned out to be "an okay guy" and they all got along quite well. Along with *L'Archéonaute* several highly skilled naval divers from the Undersea Rescue Group (GISMAR) joined the team. They made several dives during the last half of September and installed electric cables, a permanent lifeline, and eventually a phone line to facilitate communications between the cave and the ship. The divers also installed some protective concrete blocks and a locked gate and posted an underwater sign warning against entering this dangerous and delicate place.

Stylistic criteria suggested the art was Solutrean (22–17 KYA) and an initial carbon-14 analysis indicated that charcoal found on the cave floor was 18,440 +/- 440 years old. Despite the prudence of Cosquer and the "official reserve" of the Ministry and

the scientists it hired, in mid-October news of the discovery was leaked to the press. This meant it would attract the curious and also potential thieves, so Jack Lang, the minister of culture, probably acting on Clottes's advice, issued an emergency decree that would last for a year and would treat the cave as a national monument. It was then promptly closed to nonofficial visitors.

So far as Clottes and his team were concerned, there was no reason to doubt the authenticity of the cave art. They had the firsthand observation by Courtin, some excellent photographs, and the carbon-14 dates. Moreover, they had a profound understanding of how dangerous it was to try to enter the cave and had no doubts regarding the prudence of closing off access. To many prehistorians in France and abroad, however, the act of the Ministry looked suspicious. They began by questioning Lang's motives and those of his advisors; soon enough they questioned the authenticity of Cosquer's discovery. Even Cosquer wondered if the whole thing was a gigantic prank (*canular*).[8] There were likely two reasons for this initial skepticism, apart from the ignorance of most land-based prehistorians of the dangers of underwater archaeology.[9] The first was the poor quality of the photographs published in the media; the second was a scandal earlier in the year stemming from press reports of a new discovery of Paleolithic art in Zubialde cave in the Basque country of Spain that turned out to be a hoax.[10]

In the first scientific report on the cave (it appeared in *Bulletin de la Société préhistorique française*), one can sense the indignation of the authors that the discovery had been questioned in this manner.[11] They spent the first twenty pages of their report providing a narrative of the discovery of the site along with an account describing the images and engravings it contained and noting that it was the first cave discovered in Provence containing Paleolithic art. They reported the reception the discovery evoked in specialists and tried to understand the skeptical responses several of them had made to generally uninformed questions from journalists. The discovery of decorated caves in France and Spain is not rare, they said. On average, about one a year is discovered, and for the most part nothing is done to prove their authenticity or their age because they are not subjected to intense archaeological excavation. Most often "the prehistorical character of their art is accepted without discussion." Occasionally a discovery is accompanied by polemics, as with Altamira, Lascaux, Rouffignac, and a few

others. The reasons for differing receptions may vary, but in their report the authors said they had been particularly careful to favor scientific accounts of material evidence, including carbon-14, over arguments about style and cultural affiliation.

They then presented photographs of the art and disputed the criticisms of the skeptics, culminating in a reductio ad absurdum:

> In order for this collection of images to be fake it is necessary that *all* the following conditions be met: the forger would have to be up to date on Paleolithic art so as to make no mistake in his choice of themes and techniques while at the same time introducing spectacular but plausible innovations. He would have to be an excellent diver because the conditions [of access] are exceptionally difficult and not least of all he would have to be a fine draughtsman. He would have had to find a way to reconstitute an ancient type of calcite not only to cover the paintings but the nearby surfaces as well. He would also have had to induce a patina on the engravings, get hold of plenty of charcoal 18,500 years old from a type of tree growing in Paleolithic Provence, make fires and ensure that the hearths were also covered in calcite.[12]

Moreover, all of this difficult work involving exceptional skills would have had to have been done in secret over the course of several visits without attracting any notice in a busy maritime location and without leaving any traces in the cave of ever having visited the place. The conclusion was obvious: none of the conditions for conducting a hoax on such a scale could plausibly be met.

The authors singled out for criticism Denis Vialou, a distinguished prehistorian and student of Leroi-Gourhan, for having said there were no signs in the cave when in fact there were plenty—though they had not been mentioned in the press. A few issues of the *Bulletin* later, Vialou replied that he had expressed his reservations to journalists on the basis of what had been published in the newspapers and had made it clear to the reporters that he was not convinced the art was fake or that the discovery was a hoax. In their response, Clottes and colleagues, who were fully aware of the attention the media paid to the Cosquer discovery, took the celestial position that it was unprofessional of Vialou to have expressed any opinion at all on the basis of unscientific evidence, especially media reports. They concluded their letter with the observation that this was not the first time major discoveries had been doubted: “The most

memorable example no doubt was that of Altamira. E. Cartailhac acknowledged his mistake without trying to evade his errors or avoid responsibility for them in any way when he published his mea culpa of a sceptic (1902)."[13] Clearly the Cosquer team would be pleased if Vialou issued his own mea culpa, but Cartailhac's acknowledgment was rather more qualified than was suggested here.

In that same issue, the scientific members of the Cosquer team published the revised results of the preliminary carbon-14 dating, which also confirmed their earlier stylistic dates: "These dates must convince the last sceptics, if there are any left, of the authenticity of the art." Even more significant, they said, the dating of the negative handprints documented the earliest appearance of this kind of decoration in the Franco-Cantabrian caves at around 27 KYA, which was "the oldest date directly obtained from the pigment of a parietal painting *in the whole world*."[14]

With the assistance of the Ministry of Culture, the first full report, *La Grotte Cosquer*, was published by the CNRS in June 1992. A popular French edition appeared in 1994, and the English edition, to which we refer, in 1996. *The Cave beneath the Sea* combined excellent photographs and drawings with an extensive scientific text. Clottes and Courtin made several observations pertinent to the argument of this study.

First was the approach to the caves and cave art that was then considered to be scientific. European cave art, they said, seemed homogeneous. The animals seemed to speak one language, that of the Ice Age hunters. As a result, "we have a tendency to contract the immensity of past time and to give it a false unity. Paleolithic art was made over a period of almost 25,000 years." This meant that the Magdalenian artists of Niaux or Font-de-Gaume, who worked about 13 KYA, were closer to us than they were to the first Aurignacian artists, who worked 35 KYA. Granted that "religions" changed more slowly than technologies, over such an immense time period, they nevertheless did change. For Breuil, the context of time was not particularly important: all the art expressed magic of various kinds. In that respect, Clottes and Courtin said, Leroi-Gourhan was not far removed from Breuil: "He also put forward a universal explanation of Paleolithic art," one of a primordial duality of male/female principles. A generation after Leroi-Gourhan, however, research techniques and protocols had changed so that not only the paintings could be

studied but the archaeological context, and the material left behind by Paleolithic persons could also be examined and studied. One reason for the change was that "newly discovered caves are not looted as was the rule in the past," thanks to administrators such as Clottes. Another was the "meticulous care" practiced by modern archaeological researchers that had been pioneered by Leroi-Gourhan, particularly at Pincevent.

A second observation was that dating methods, both relative and absolute, had improved. Specifically, with respect to Cosquer, carbon-14 analysis showed two periods of occupation. Phase I, 27 KYA, the Gravettian, showed the production of finger-tracing where the surface was soft enough, along with hand stencils. About 8,000 years later, around 18.5 KYA, during Phase II, the Solutrian artists produced animals and signs corresponding to Leroi-Gourhan's Style III. What was unusual about the Phase II animals was that they included sea animals, seals and auks, in particular.[15]

Third, the authors discussed the relationship of the two phases. When the Solutreans arrived at Cosquer, they, like Henri Cosquer, would have seen the handprints:

> For people living in a world where magic practices were part of everyday life, these hands no doubt symbolized ancient power, some magic the memory of which was lost, [and so] potentially dangerous. They then tried to neutralize it. To do that they broke certain calcite draperies covered with hands, near the large submerged shaft; they overlaid some hands with dots or painted lines and obliterated others with deep strokes before placing their own depictions on the walls and ceilings.[16]

There are many examples of overengraving or "superimpositions," but they are usually understood to be evidence of a continuity in traditions and rituals rather than a break with them. The fact that the hand stencils were destroyed, slashed, and marked with dots or lines was "fundamentally different. It expresses an intention to destroy, to substitute one magic for another that was considered strange or dangerous. Perhaps this was because the symbol of hands has greater value than that assigned the animals? Because the hands represent power and taking possession? We are in the realm of hypotheses here, and yet this uncommon destruction appeals to the imagination and expresses a reality that calls for interpretation however daring."[17]

The narrative advanced by Clottes and Courtin was based on direct observation of the defacing of the hand stencils, which they stressed was unusual: "To our knowledge, this is the first time that something like this has been reported." It was "something unique in European wall art." The reason was historical, because at most caves it was impossible to date two periods of graphic expression with precision and certainly not when they were separated by 8,000 years. The history of Cosquer cave, in other words, may document the first time that newcomers obliterated and destroyed the symbols that expressed the spiritual presence of their predecessors. It was hardly the last such occasion, as the destruction of the giant Buddhas at Bamiyan (in Afghanistan in March 2001 ordered by Mullah Omar) and the destruction of Palmyra (by ISIS in May 2015) remind us. The only difference is the means the newcomers used.

In 2005, Clottes, Courtin, and Luc Vanrell, a photographer, published *Cosquer Redécouvert*, which updated the previous account with the results of three additional seasons of work (2001–2003). In order to take part in the work inside the cave, Clottes received the necessary instruction in scuba diving and earned his certificate.[18] They discovered many engravings and other images overlooked in the original study and, after examining the overengravings and superimpositions, concluded that there were not many differences in style, theme, or technique between the earliest Gravettian art and the Phase II Solutrean, notwithstanding the 8,000 years between the creation of the respective imagery.[19]

Chauvet

"On the evening of 18 December, 1994 we were the first three people for perhaps twenty thousand years to set foot in one of the world's most beautiful decorated caves: Chauvet Cave."[20] The cave is located in the Ardèche in southeast France, a region the discoverers had been exploring for many years. The story of the discovery, like that of Barbu Cosquer, combined excitement and adventure with great prudence. It was not the danger of underwater access that made them cautious, but their experience in cave exploration that had imparted a deep awareness that their presence could irreparably change the evidence they discovered. They took major precautions to keep the site secret and, once inside, did their best to minimize their impact on the cave fabric.

Ten days after first entering the cave, they had deployed 200 meters of plastic on the floor over which they walked, mostly in stocking feet. On December 28, Chauvet telephoned the Regional Administration for Cultural Affairs and spoke with Jean-Pierre Daugas, regional curator of archaeology, who immediately phoned Jean Clottes, who immediately left Foix for the Ardèche. He made his first visit the next day and, like most scientists, was initially skeptical of the accuracy of the verbal accounts he had received: "But Eliette [Brunel Deschamps] promised him that, on leaving, we could all drink the champagne she had brought. And in fact the very first panel reassured him completely about the authenticity of the depictions. The film of calcite that covers certain panels and the subsidence beneath the owl left him in no doubt."[21]

Early in the new year, the scientific study of the cave began. Mindful of the controversy regarding the authenticity of Cosquer and determined not to repeat it, Clottes invited a dozen or so specialists, including Vialou and Brigitte Delluc, who both had criticized the Cosquer claims, to inspect the site for themselves. They did. "No doubt, this time, regarding the authenticity of the art."[22] By mid-January, the Gendarmerie had posted a guard; a few days later the entrance had been secured by a steel door and a security system had been installed. On January 18, the discovery was announced in Paris, where the Ministry of Culture had organized a press conference. The minister, Jacques Toubon this time, presided over the first video screening, and the discoverers were subjected to the usual questions from journalists: "Our main concern had always been to preserve the cave and deliver it intact, just as we discovered it, to humankind. Mission accomplished."[23]

In an epilogue to this first report on the cave, Clottes provided an account of what he considered to be the initial implications of the find: "In Chauvet Cave, most fortunately, everything remains to be done, everything is possible, thanks to the awareness and the intelligence of the explorers who picked up nothing and took pains not to damage the floors." This caution gave Chauvet a "decisive advantage" over Lascaux, Altamira, and Niaux in that its "perfectly preserved" floors are "capable of yielding tremendous information about the human and animal activities that occurred in the cave."[24] He then described the images and signs on the walls, where they were located in the cave, what colors were used, and so on. Stylistic competence indicated a

wide range of artistic ability. Some images were clumsy, others adept (see images 6–7). The themes and imagery were unusual: rhinos, felines, and bears "are rare animals in Paleolithic wall art. Yet here they are depicted as frequently with one technique as with the other," whether red or black. Some animals looked Perigordian (27 KYA) and others Solutrean and Magdalenian, which implied a time bracket of 21–17 KYA. Clottes considered this "plausible," but "the powerful originality of Chauvet Cave made dating surprises a distinct possibility."[25]

More surprising than the stylistic dating were the results of direct dating. A CNRS laboratory near Paris provided carbon-14 dates of 32–30 KYA for the paintings and 26 KYA for some torch swipes. Other laboratory results from Lyon and Oxford provided estimates around 29 KYA, though not for the art. Clottes concluded there were three distinct age clusters: (1) 31 KYA for samples from the paintings; (2) 26 KYA for the torch marks; and (3) 24 KYA for two other floor samples.[26] The surprising age of these dates, he went on, "illustrates the limits of our knowledge about Paleolithic wall art, and underlines the danger of making chronological attributions based only on stylistic criteria and the problem of the duration and recurrence of conventions." More specifically, the Aurignacian age of Chauvet and its resemblance to the much later art at Lascaux and Pech-Merle suggested that (1) artistic traditions lasted a very long time, or (2) the other caves were much older than had been thought. Clottes also suggested that the images of rhinos and felines at Chauvet reflected a much different spiritual world than was reflected later in Magdalenian imagery. "These animals," namely, rhinos and felines, "doubtless symbolized danger, strength and power."[27] Since aurochsen, bison, and mammoths could equally symbolize danger, strength, and power, a more cautious interpretation would have stressed the difference between a dangerous predator, such as a bear or a large cat, and dangerous prey.

Clottes then speculated that the imagery of Chauvet may be linked to the equally sophisticated Aurignacian statuary of Vogelherd, perhaps by overland routes along the Rhône and Rhine valleys between the Ardèche and the Jura. For one reason or another, the Chauvet discovery meant to Clottes that it was necessary to revise the style-based dating classifications of Leroi-Gourhan: "Rather than invoke a late invention of art, prepared by an immense period of trial and error, it now seems more logical—since the capabilities existed—to envisage the probability of

developed forms [of art] that have not survived. If art was indeed invented, in various different forms, several tens of thousands of years ago, one must expect new discoveries, at even older dates than those known today, between western Europe and the Near East."[28] Given the recent discoveries of artistic capabilities among Neanderthals, it is worth recalling that these Aurignacians coexisted with Neanderthals.[29]

Vialou asked the heritage minister to hold a competition to see who would be in charge of documenting and publishing the analysis of the cave. Clottes must have taken considerable satisfaction when he won unanimously.[30] The result of this second and more detailed examination was published in 2001.[31]

Leaving aside the technical accounts of geology and dating, Clottes and his team reported two major discoveries absent from the earlier book. The first was that the animal image count had more than doubled. They also discovered two more species, a second bird, and musk oxen. The number of rhinos, sixty-five, constituted three-quarters of all the rhino imagery in France. The second insight grew from the observation that the more than 400 animals "were certainly not drawn at random. . . . The cavern was thought about and used with specific aims in mind."[32] That is, there was a structure to the placement of animals in the cave based on (1) the topography of the cave, (2) the morphology of the walls, and (3) techniques used and themes selected in light of (1) and (2). Clottes and Yanik Le Guillou paid particular attention to the End Chamber because of "the spectacular way in which it has been thought out and constructed. In the first part, on the left, the big felines, in two groups of comparable importance, separated by an empty space of several metres, seem to face each other. The Big Panel is organized in a symmetrical way on both sides of the central niche, each lateral section displaying two parts determined by reliefs in the wall, with distinct subjects."[33]

More specifically, Clottes concluded that, first, it was evident that the artists were familiar with the entire cave. Second, the imagery formed two collections or compositions, the first consisted mainly of red figures of bears and red dots, the second mainly of engravings and black figures organized into large panels. Third, there were deliberately chosen empty spaces. Fourth, the major panels involved several phases of production but with relatively few overengravings, which meant that relatively few people actually produced the drawings. Fifth, there was a unity to the cave; from the entrance to the depths, artists

made use of topography, and the images were stylistically similar. Clottes drew the conclusion that "most figures were drawn by a very small number of people who shared the same ideas, probably during a fairly short length of time, even during the period when the cave was first visited by humans. If their successors, some millennia later, also created a few works, the differences were not so marked that we can recognize them today."[34]

He also reiterated two points raised in the initial report. First, the depiction of the same animals by the same techniques indicated the presence of generalized conventions and homogenous concepts: "It is possible, if necessary, to accept the idea that the same themes lasted for thousands of years. . . . Even if it was produced by several artists in a number of well-spaced visits, it bears witness to an unquestionable unity."[35] Second, 81 percent of the animals were large and dangerous, as was also true of the mobiliary art of the Swabian Jura. The finding of so many large and dangerous animals "constitutes a drastic break with the theories of Leroi-Gourhan and with accepted ideas." Even so, there were plenty of unknowns, particularly regarding meaning. Why so many dangerous animals? Were the differences between the red and black parts significant? Were the carbon-14 dates reliable? What did they mean for stylistic criteria? How did the two-dimensional Aurignacian images of Chauvet relate to the three-dimensional mobiliary and figurative art of the Jura?

To these commonsensical questions critics added several more. One of the reasons, it seems to me, was because Clottes exercised very tight rein over who obtained access to the cave. Partly, no doubt, the media extravaganza surrounding Cosquer was responsible. Partly also was the first instinct of a bureaucrat: control. Clottes observed, "Such an exceptional and significant discovery" as Chauvet "deserves all the precautions we can take. After all, if it has waited for thirty thousand years, what are a few years more?"[36] The criticism of excluded specialists, many of whom were not French, raised some interesting questions.

Paleolithic art has been conventionally authenticated by experts who were first concerned with the observation of calcite covering the imagery and the observation of stylistically similar imagery, either with respect to securely dated mobiliary art or to other parietal art. Either way, apart from the existence of calcite flows, the judgment was one of expertise and connoisseurship, no

different with respect to Paleolithic art than Renaissance art.[37] The assumption was that art varied in terms of style, technique, and subject matter, and that, with proper education or training, the historian could recognize these changes. This general approach gave rise to the stylistic chronological schemes of Breuil and Leroi-Gourhan. Starting in the 1990s, direct dating or absolute dating has challenged the "relative" dating based on connoisseurship. As Pettitt and Pike observed, "By the 1990s the analysis of cave art pigments and their direct dating exacerbated the final collapse of the grand stylists' schemes."[38] In 1995, for example, Robert Bednarik rather grandly announced that a good part of the "ultra-sophisticated art" of Chauvet was "well in excess of 30,000 years old" so that "all existing models of stylistic development in the Paleolithic period have become entirely redundant." Perhaps even more significant, he was willing to dismiss the whole notion of connoisseurship, taste, and style. "Stylistic dating of rock-art," he said, "is based on the belief that some practitioners . . . possess the ability to detect stylistic characteristics in a corpus of rock-art they are very familiar with." Unfortunately, he went on, "the precise criteria for this ability . . . and how the criteria could be expressed in a testable form remain entirely unclear."[39] Bednarik was oblivious to the problem raised by Kant in *The Critique of the Power of Judgment* as to why such criteria of judgment could never be sufficiently clear to be expressed in a "testable form." Nor did he consider the arguments of Polanyi. However that may be, for purposes of this section we refer to the traditional stylistic method of determining chronology as the archaeological method or a method based on archaeological criteria. The method of direct dating of pigment by carbon-14 analysis we refer to as the "chemical method" or "a method based on chemical criteria."

Wide-ranging arguments among experts over the superiority of absolute chemical versus relative archaeological dating obviously would have a bearing on the dating of the art at Chauvet. Initially, the imagery looked to be Solutrean or Magdalenian (21–12 KYA); radiocarbon dating indicated that the charcoal from the cave was 30–32 KYA, which meant, arguably, that the art made by this charcoal was Aurignacian. Clottes was well aware of the problem and relied on the superiority of absolute chemical dating techniques for his claim that Chauvet was the "birthplace of art," to use the subtitle of the second book on the cave. An early critic of Aurignacian dating of the Chauvet

imagery was the German archaeologist Christian Züchner.[40] He argued that the black series of images belonged to the late Solutrean and early Magdalenian, which made them contemporary with Lascaux. The red series of paintings were earlier Gravettian. In the absence of carbon-14 data, he said, no one would even have thought differently.

Clottes's general answer was equally straightforward: the notion of a linear evolution of art, as espoused by Breuil and Leroi-Gourhan, was no longer tenable. Indeed, it had come under criticism during the 1980s.[41] Thus even in a "post-stylistic era," conflict between carbon-14 and stylistic dating was always possible.[42] All that seemed to matter to Clottes, however, was that "the enormous total of rare and dangerous animals in the Grotte Chauvet does not constitute a unique phenomenon, isolated in time and space."[43] On stylistic or archaeological grounds, in other words, Chauvet was nothing special. A few years later, the "Chauvet team" reiterated their reliance on carbon-14 dating.[44] Thus began another round of controversy or dialogue.

In 2003, Pettitt and Bahn began their discussion by observing that interesting problems arose when direct and indirect dating were "discordant" because logically there was always the possibility that the radiocarbon dates were wrong. The most obvious sources of error, as Züchner also noted, may be that the date of the charcoal reflected the date a tree died, not the date the charcoal was made or the date it was used to make an image.[45] They also pointed out that the Chauvet radiocarbon dates were inconsistent and that, quite clearly, "the rock and cave art which is definitely known to be Aurignacian looks pretty crude and simple, a long way from Chauvet—which of course is why the Chauvet dates caused such a shock." They concluded by recommending that more laboratories be involved in the carbon-14 dating in case there were systematic problems with the main lab that was used, the Climate and Environmental Sciences Laboratory at Gif-sur-Yvette, outside Paris.[46] The response from the Chauvet team was first that "Chauvet Cave is the best-dated rock art site in the world," and second that "several major laboratories" obtained similar dates.[47]

In 2007, Alcolea and Balbín tried to find a middle ground, but increasingly the divisions between an archaeological interpretation and chemical analysis seemed to grow.[48] More typical were the remarks of Pettitt and Pike, which posed a direct

challenge to the carbon-14 procedures: “How do we know the dates are technically reliable?”[49] They reiterated the problem posed by relying so heavily on the Gif-sur-Yvette laboratory to date the art. How do we know, they asked, that this laboratory might not be producing systematically erroneous results owing to some problems of contamination or of calibration? Fortea-Pérez noted that the Gif-sur-Yvette dates for the same dots from Candamo cave (Asturias) in Spain were more than twice that estimated by the Geochron Laboratory in Cambridge, Massachusetts.[50]

A second problem, which Züchner had already raised, was that art did not require freshly produced charcoal to be used. With respect to Chauvet, photographs of charcoal lying on the cave floor “suggest that it could still be used to create art. Why should this not have been so in antiquity?”[51] A year later Pettitt was quoted as saying rather cheekily, “Could I not enter the cave today, pick out a piece of this well-preserved charcoal from a hearth on the floor and write ‘Paul Pettitt was here’ on the cave wall?”[52] Clottes dismissed this possibility as “bizarre,” but the fact remained that relating the combustion events on the cave floor to the production of art simply could not be demonstrated. “At present,” Pettitt and Pike wrote, “Chauvet might be described as the world’s most *problematically* dated cave art site.”[53]

A third problem was noted in passing by Pettitt and Bahn in 2003: exposed rock surfaces could also contaminate any pigment samples because such rock surfaces were “chemically active,” and the samples involved were necessarily minute so as not to destroy or deface the art. That is, if the rock surface was chemically active and the sample was very small, it would not take much rock surface to contaminate the pigment sample. By 2008, Pettitt was of the view that “direct dating of microscopically small samples of charcoal scraped off of chemically-active rock environments is an endeavor that must be treated as experimental, given the many pitfalls involved.”[54]

The answer to the question that Clottes raised in the first book on Chauvet, “How do we know the carbon-14 dates are reliable?,” was obvious to Pettitt—we don’t. The dates were not reliable. “On the grounds of the cave’s and the region’s archaeology, the art of the cave is undated.” Moreover, he went on, “controversies over the age of parietal art are a significant part of the historical fabric of the study of the Upper Paleolithic. Why should things have become so apparently uncomplicated all

of a sudden?" To him the answer was also obvious: assumptions regarding carbon-14 dating had simply become dogma.[55] Again Clottes and the Chauvet team ignored the genuine scientific issue, that there existed, in reality, a conflict between scientific chemical criteria and scientific archaeological criteria. Moreover, it could not be settled by having the backers of chemistry dismiss the objections of the archaeologists. Eventually both sides had to produce a narrative that accounted both for their preferred interpretation and for the mistakes of their opponents. Those who favored carbon-14, however, simply dismissed the archaeologists as making "ridiculous" objections. There were heaps of charcoal right in front of the paintings, they said. Was it plausible that the Aurignacians just left piles of charcoal around without drawing anything and thousands of years later the Magdalenians showed up and started drawing on the walls?[56] The Chauvet team clearly found such a narrative decidedly implausible, which was fair enough. However, their critics, who favored an archaeological interpretation, found the Chauvet team's narrative even more implausible.

In 2014, Jean Combier and Guy Jouve took yet another look at the controversy. Chauvet, they said, was not an "isolated entity of astonishing precocity" when considered in the regional, cultural, and thematic context. But neither is it Aurignacian. It is Gravettian and Solutrean (26–18 KYA).[57] They quoted with approval an early remark by Clottes, that carbon-14 datings "must not be accepted blindly," for the by-now familiar reason that minute pigment samples are exposed to high risks of contamination.[58] At the end of a lengthy analysis focused on the cultural and artistic context of the region and, in particular, the absence of any other Aurignacian artifacts, it seemed clear that "the Aurignacian dating of the parietal art cannot be retained." However implausible, perhaps the artists did use wood carbon that was already thousands of years old.[59] Perhaps more likely, the carbon samples were contaminated by much older bones of cave bears.

Several scholars commented on the Combier and Jouve paper. Lorblanchet, for example, again drew attention to the "splendid isolation" of Chauvet as a presumed Aurignacian site. Moreover, if Chauvet were Aurignacian, it would effectively overturn a century of work dating European Ice Age art. Such a possibility, however remote, must not be dismissed, of course, but the fact remains that most of the art of Chauvet was chemically

undated.[60]

Pettitt and Bahn were more abrupt in their criticism. After summarizing the debate between archaeological and chemical dating, they noted that "none of the critiques raised over the last 18 years has ever been addressed by the Chauvet team. This neglect, in our opinion, amounts to scientific chauvinism."[61] They pointed out that the sampling was hardly representative of the cave: "Twenty-nine dates have been produced on three pieces of charcoal from *one hearth*. This must be by far the world's best-dated single feature." Likewise, there were numerous datings of the same cave bear bone: "Does the cave possess the world's best-dated cave bear in addition to the world's best-dated hearth?"[62] Contamination from the cave walls had never been addressed and the conclusion that there has always been only one entrance to the cave had never been justified or even fully documented. Their conclusion was also obvious: "One simply cannot take this dating program seriously" so that "reliable dating for the art on Chauvet's walls simply does not exist."[63]

Pettitt and Bahn ended by indicating a likely reason for this "scientific chauvinism." The major consistency "in the official studies of Chauvet cave from 1995 to the present [2014] remains the presentation of erroneous claims and highly incomplete and unsatisfactory data, together with the ignoring of contrary opinion and critiques." It seems to me that the problem may lie in the category of "official studies" by a team sanctioned by the French state. It is not a notable characteristic of bureaucrats anywhere in the world to acknowledge their mistakes. However that may be, Pettitt and Bahn were no doubt correct to conclude that "the silence from the Chauvet team on every single one of the points raised so far inevitably leads us to suppose that they are unable to produce counter-arguments or data to uphold their increasingly frail position."[64]

In this same issue of *L'Anthropologie*, Christian Züchner, who initiated the archaeological criticism, offered what (it seems to me) was the most persuasive narrative regarding the rejection of the chemical dating. Once again it was a question of plausibility, as is true of all narratives. Ever since 1994 and the discovery of the cave, Züchner said, there have been two worlds of Paleolithic art: "*Grotte Chauvet* on the one hand and the rest of the European Ice Age art on the other hand." Prima facie such a possibility was unlikely in the extreme. The implication was even more so. When Clottes and Courtin disputed the skeptics regarding Cosquer, their

most persuasive argument was to describe the absurd conditions that would have had to have been met for the hoax to succeed: the forger would have to have been an expert artist, an expert diver, an expert in fabricating calcite, a collector of 18-KY-old charcoal, and especially adept at concealing all traces of his presence. In the same spirit, Züchner said that if Chauvet were Aurignacian, "in this individual cave, the artists anticipated the entire development of the Franco-Cantabrian art with all its thematic and stylistic characteristics, whereas outside the cave, the same development later occurred once again throughout Western Europe over a period of 15,000 to 20,000 years."[65] In short, the global acceptance of the Aurignacian age of Chauvet remained a question of dogma, not science.

Clottes was a bureaucrat within the French state and an archaeologist, and in large measure his approach to prehistory and its problems was decidedly official. Preservation was the top priority, which meant official control of access and the vigorous defense of official findings. This was as true for Cosquer as it was for Chauvet. The difference between the two was that the persuasive narrative, namely, the impossibility of faking the art in Cosquer cave, was effectively reversed with respect to Chauvet. In the latter cave, it looked impossible for the official version, based on questionable chemical analysis, to overrule the archaeological knowledge of style based on experience and a historically well-founded interpretive tradition. This is not to say that the archaeological tradition *could* not be overturned by rational argument and scientific evidence but that it *had* not been: the evidence was questionable and the reasoning was abstract in the sense that the carbon-14 dates "should" have been accurate. But maybe they were not.[66]

As a postscript to this controversy, we must note that all the archaeologists were aware that "very few paintings are eligible for direct dating" because of expense and because of an absence of organic material.[67] Style could not, therefore, simply be replaced with chemistry. One option has been to argue, on stylistic grounds, that the apparently Aurignacian mobiliary art of the Swabian Jura provides the appropriate context to understand Chauvet.[68] Clottes suggested this; so have others.[69] One obvious way to deal with "discordant" datings would be to consider not one particular method but what Bahn and Vertut called "assemblages" of attributes so that several lines of interpretation could be marshaled, where the evidence permits, to suggest

plausible dates.[70] Whether this could be done with Chauvet when only Swabian mobiliary art could provide a context to suggest plausibility remained an open question. Perhaps comparison with an undiscovered Aurignacian cave filled with parietal art was necessary. Nowell and von Petzinger observed, "In archaeology, as in life, context is everything."[71] It seems to me that it was also a matter of judgment whether thematic similarity of Aurignacian mobiliary art could provide sufficient context for parietal art.

The purpose in discussing the various controversies that Clottes engaged in was not to suggest that his administrative responsibilities reduced his openness as an archaeological scientist. For a political scientist, one of the most important aspects of his work derived from his interest in the spiritual significance and meaning of Upper Paleolithic art. That was to him one of the most interesting questions raised by the extensive imagery at Chauvet of rhinos and large cats. This interest was what led him to consider the shamanistic hypothesis, which we discuss in the following section. It is also what led him to include the reflections of an anthropologist in the second volume on Chauvet, which we now consider.

Joëlle Robert-Lamblin is an anthropologist at the CNRS and a specialist in Inuit culture. Despite the well-known reservations of Leroi-Gourhan, Robert-Lamblin argued that one might insightfully compare the structure expressed through the art of Chauvet cave with what was known of Arctic populations, whose foraging way of life was likely not dissimilar. What Robert-Lamblin had in mind was not Arctic weather but an assumption that both the Inuit and the society that produced the Chauvet art both integrated "daily preoccupations, religious thought and artistic expression."[72] That is, Robert-Lamblin's knowledge of contemporary northern peoples may help us interpret Paleolithic ones. Let's see.

To start with, caves were, practically by definition, sacred spaces because (1) they contrasted with ordinary aboveground space, (2) the contrast was symbolized by an opening or entrance to the cave world, and (3) communication from below to above was therefore possible. Considered simply as a cave, Chauvet, as other caves, physically expressed a binary ordering code: aboveground and belowground. More generally, the ordering code was a duality that suggested a system of opposites. Within Chauvet, "the distinctions difference is [expressed] in colours,"

namely, the red and black images, but also is expressed in the directions between realistic animals and symbolic signs. “The walls of Chauvet Cave thus seem to reveal an Aurignacian art that is profoundly marked by the theme of duality,”[73] but not in the commonsensical (to us) categories of predator and prey, dangerous and tasty. On the other hand, the “first part” of the cave had more red handprints and signs, and black animals were found more in the “second part.” This could correspond to an initiatory route or a way to separating ordinary persons from initiated ones that in turn may have expressed a conception of the cosmos. If the structure of the cave did express an initiatory route it may be significant that the farther in you went, the more animals there were—35 percent of all those identified so far were in the End Chamber, which was but 10 percent of the cave volume.

The use of conditionals and subjunctives suggested that Robert-Lamblin was not proposing an abstract speculation so much as a “working hypothesis,” rather as Laming-Emperaire once did. Accordingly, one might postulate a binary conception of the cosmos expressed, for example, in the image of the confrontation of the rhinos, which remained, to date, unique in Upper Paleolithic art. Such a binary principle, expressed as light/dark, male/female, sun/moon, above/below, life/death, and so on, was certainly part of Inuit cosmology. Moreover, a binary cosmos did not exclude continuity as much as require it. In the Upper Paleolithic context of Chauvet, the continuity was expressed as part of the consubstantiality of the animal and human worlds. This is why, Robert-Lamblin said, that (1) the animals depicted were not human prey; (2) they may be large and dangerous but they were not depicted as threatening. “Rather, the figures suggest harmonious relationships between humans (spectators or actors) and these big mammals, which must have been respected, admired, even venerated, for their power, their strength, their imposing bearing or their speed, and which were perhaps depicted in order to appropriate their qualities.” Accordingly, the relationship of humans and animals may govern the groups’ spiritual and material life.[74] In particular, using handprints to outline a large herbivore “suggested a merged perception of humans and the animal kingdom.” Several of the feline muzzles look slightly humanized, which suggested the same thing.

The cave bear occupied a special position as mediator

between humans and animals. To begin with, both occupied the same site. Both also marked the walls and both were omnivorous. In Arctic cultures, bears and shamans were kin. Perhaps in the Upper Paleolithic the bear was the host of the cave and an intermediary between the spirits living there and the humans who visited.

Leroi-Gourhan, who had also extensively studied Inuit cultures, said he "often wondered" whether the organized subterranean world was not the best representation of a shamanic journey. "But one should abstain from crossing that line," he said, in order to avoid having so much information, borrowed from the most varied cultures, springing up any old how.[75] Robert-Lamblin may have hinted that it was either acceptable or necessary to cross that line; Clottes clearly crossed it. One reason he did so was not because he randomly borrowed from "the most varied cultures springing up any old how," but because he interpreted Shamanic experiences in light of human universals, a problem to which we now turn.

The Shamanic Hypothesis

What Is Shamanism?

A generation ago, anthropologists often dismissed shamanism as "a made-up, modern, Western category, an artful reification of disparate practices, snatches of folklore and overarching folklorizations, residues of long-established myths intermingled with the politics of academic departments, curricula, conferences, journal juries and articles, and funding agencies."[76] The reason for this severe judgment seems to have been a close association of the term with doctrines of cultural evolution that most anthropologists no longer considered persuasive. On the other hand, a few years later, the study of shamanism underwent a "renaissance" as a result of a new interest in the study of "altered states of consciousness" (ASC), an interest in shamanism as therapy, and in assorted New Age experiments in spirituality.

The last-named sources of the recent revival in shamanistic practices are important for the current understanding of contemporary society in the industrial West in the same way that Zen or Hare Krishna were significant modifications of Buddhist and Hindu religious practices in the middle decades of the last century. The great appeal of this latest alternative to traditional

and institutionalized Western religions is that, with or without the assistance of chemicals, it achieves quickly results that are deemed by practitioners to be satisfactory. Students of traditional shamanism are by and large skeptical of "urban shamans" on the grounds that the phenomenon says more about contemporary city-dwellers than it does about shamanism.[77] Many of them are equally skeptical of the applicability of the term to Upper Paleolithic experiences, as indeed are many archaeologists. One of the reasons for the skepticism is because in recent years general studies of shamanism have been replaced with focused studies of specific practices in equally specific cultural contexts.[78]

Such general theorizing as exists currently deals with consideration of the psychological state of the shaman. The concern is not about what is different among shamanic practices but about recurring likenesses that could be explained by an analysis of the mental health of shamans. From early in the twentieth century one assumption has been that shamans were mentally unbalanced,[79] or, as we say nowadays, they suffered from "mood disorders."[80] Often on the basis of the same evidence, equally persuasive arguments have been advanced that shamans were and are entirely sane.[81] Current disputes seem to center on the proposition that, however unusual shamanic experience may be (and however described), it is within the behavioral repertoire of normal, that is sane, humans.[82] It would seem that shamanic consciousness is a matter of "degree" of alteredness.

The key to the current understanding of shamanism as an ASC among both anthropologists and archeologists may be connected to the widespread experimentation with drugs during the 1960s. Anthropologists studying the use of psychedelic drugs, particularly among South American shamans, saw some obvious parallels (perhaps) with their own youthful experiences.[83] By and large these very modern behavioral scientists were skeptical regarding the experiences of spirit worlds and sought to explain these ASCs by way of brain physiology and brain chemistry.[84] The obvious difference between contemporary anthropologists studying contemporary shamans and contemporary archaeologists postulating the existence of Paleolithic shamans is that the latter cannot interview their subjects. Instead they assume that (1) shamanism is an ASC, and (2) the same brain physiology is involved today as was true 30 KYA. Those who reject these assumptions have concluded that "we have no present means of

determining states of consciousness of prehistoric humans."[85]

An alternative to both a generalized psychological approach to shamanism and a highly focused particularist one is the hermeneutical and phenomenological approach used by scholars of comparative religion, notably Mircea Eliade.[86] "Shamanism in the strict sense," Eliade wrote, "is pre-eminently a religious phenomenon of Siberia and Central Asia."[87] He provided linguistic and etymological reasons for accepting this "strict" understanding of the practice but added that a preliminary definition that shamanism is a "technique of ecstasy," meant that there were many additional locales of shamanistic practice besides Siberia. Indeed, according to Eliade, "it would be more correct to class shamanism among the mysticisms than with what is commonly called a religion."[88] Likewise he wrote in the preface to his book that shamanism is "at once mysticism, magic, and 'religion' in the broadest sense of the term," which seems to me to be close to what Voegelin meant by a compact symbolism.[89] Before considering criticism of Eliade's argument, let us consider some of its useful implications.

By starting with the most obvious and widespread instances of shamanism, Eliade was able to criticize a number of reductionist arguments. Early studies of Arctic Siberian shamans attributed their neurophysical condition to the cold, to long winter nights and attendant sensory deprivation, to lack of vitamins, and so on. So far as Eliade was concerned, however, from within the horizon of *Homo religiosus* all such "explanations" along with varieties of insanity were simply irrelevant: "The mentally ill patient proves to be an unsuccessful mystic or, better, the caricature of a mystic. His experience is without religious content, even if it appears to resemble a religious experience, just as an act of autoeroticism arrives at the same physiological result as a sexual act properly speaking (seminal emission), yet at the same time it is but a caricature of the latter." Likewise the use of intoxicants, from hashish to vodka, has been widely reported. "But what does this prove concerning the original shamanic experience? Narcotics are only a vulgar substitute for 'pure' trance," and moreover a recent one that points to "a decadence in shamanic technique." Such "narcotic intoxication" provides "an *imitation* of a state that the shaman is no longer capable of attaining otherwise." Decadence and imitation, the substitution of the "easy way" for the "difficult way," appeared in many forms across the contemporary world where shamanism was practiced.[90]

Eliade's conclusion was straightforward: Arctic shamanism "does not necessarily arise from the nervous instability of peoples living too near the Pole and from epidemics peculiar to the north above a certain latitude." Nor, more broadly, is a shaman a sick person; "he is, above all, a sick man who has been cured, who has succeeded in curing himself."[91] The great strength of phenomenology was that it—literally—gives an account (logos) of an appearance (phenomenon) and thus aimed to avoid all reductionist fallacies. For their part, anthropologists and archeologists concerned more with the rich variety of existing dissimilarities rather than with common or essential meanings have ignored or dismissed phenomenology as "German idealism, of no use in serious field work."[92]

Eliade, however, was not engaged in fieldwork—for which he has been criticized by those who are. Alice Kehoe, for example, characterized Eliade as conforming "to the European tradition of compilation of travelers' descriptions used to exemplify a category named in a European language. . . . Sitting in his quiet book-lined office, the highly educated scholar organized data to demonstrate the essential nature and accepted range of occurrences within the selected category." This "scholastic tradition," and "erudite contemplation," she said, was "more highly valued than the dirty field work of more menial producers of data."[93]

Granted that Eliade merely "collated" secondhand data rather than collected or created it firsthand, this more or less conventional academic division of labor did not account for Kehoe's peevish tone. Rather, she considered Eliade to be a contemporary representative of an unacknowledged racism that she believed could be traced to the European Enlightenment and to its Romantic aftermath. Let us consider her argument, since it recurs among critics of the shamanism thesis regarding Paleolithic art, and leave aside for the moment whether it applied to Eliade.

After discussing the ethnographic literature on shamans in the original sense of the term, namely, Siberians conducting rituals using drums, dance, and song, she then discussed "religion" in terms of its social function, a conventional anthropological approach.[94] In the third chapter, she described "the classic Western idea of the shaman" appropriated by Eliade. The essential element of this "idea" was that "distant primitive savages" preserved "a pure primordial religion lost to alienated

educated civilized men." In contrast, Kehoe said that "American anthropology, like Americans in general, tended to disparage ivory-tower scholars."[95] Evidently this meant that American anthropologists were better equipped to resist "the traditions of Western intellectual culture" and the "ancient chestnut of Western thinking" that attributed "cultural primitivism" to far away "people of color." Such criticism was, at least in principle, fair enough, but it also avoided the important question: What did Eliade think he was doing?

Kehoe was aware that Eliade approached the "problem of shamanism" from within the context of his academic practice, namely, "the history of religions, the only perspective that does not nullify its significance and function."[96] From within this perspective, Eliade then analyzed accounts of shamanic experiences "emphasizing analogies with the initiatory rites and mystical experiences of certain primitive and Oriental peoples." Granted that one may today find his language insensitive, the main thing to which Kehoe objected, if I understand her correctly, was "the peculiar claim that a history of religion is very different from any other history in that religion can reverse history, i.e., can revert to an earlier condition."[97] For a political scientist, such a "peculiar claim" seems more a commonplace. The reason why we still study Plato and Aristotle, for example, is because they are more insightful than their successors, which is to say, their experiences and the articulation of them in texts such as the *Republic* or the *Politics* provide a more comprehensive account of political reality than do, say, Hobbes or Rousseau or even Hegel, to say nothing of our contemporary luminaries.[98]

It also seems to me that, if there were any serious problems with Eliade's approach, they concerned what he meant by suggesting (or assuming) that certain experiences of individuals in contemporary foraging societies were comparable and more or less equivalent to experiences of Paleolithic foragers. What he called the "essential elements" were constituted by "ecstatic experiences and by magic."[99] His language may not have been the best, but what he had in mind seemed to be a level of generalization that exceeded what paleoscientists and anthropologists would typically consider to be scientifically acceptable. Unquestionably, therefore, shamanism was "an artifact of anthropology," comparative religion, or some other modern scientific practice.[100] Earlier in this study we have discussed the experience of the consubstantiality of the cosmos,

the primary experience of the cosmos, and the corresponding compact cosmological consciousness. In this context of Eliade's "comparative religion," some such language of equivalence or analogy was inevitable. Whether that was also true with the application of Eliade's understanding of shamanism to Upper Paleolithic cave art was another question.

To recast the "problem of Eliade": because he was interested in the essence or meaning of shamanism, he provided an initial description of shamanism, not the specifics of shamanistic practices turned up by Kehoe's practitioners of "dirty field work" and "menial producers of data." This description was at a high level of generalization: "a technique of ecstasy" or "trance," or even "possession."[101] Considered as a generalization or as a "composite picture," his evocation looked like an adequate preliminary approximation. But this raised a second question: What were ecstasy, trance, and possession? It seems to me that, for a phenomenologist such as Eliade, these terms were taken at face value and conveyed a commonsensical meaning. For a specialist, not so. Thus Roberte N. Hamayon, for instance, asked in the title of her article, "Are 'Trance,' 'Ecstasy' and similar Concepts Appropriate to the Study of Shamanism?"[102] And Kehoe answered, "No." Trance may be a useful and intelligible concept for Western analysts, she said, but shamans describe their experience as being in direct contact with spirits. So far as I can see, that was also Eliade's argument. Indeed that was precisely what he had in mind when he affirmed the possibility of "reverting to an earlier condition," at least imaginatively, to grasp what was meant by the direct contact of human consciousness with spirits. The problem was much transformed when one wondered what the direct contact of human consciousness with spirits might mean to a modern anthropologist whose scientific approach precluded any contact with the spiritual world, even imaginatively.

Consider a story told by Lévi-Strauss about a Kwakiutl shaman, Quesalid.[103] It seems that Quesalid did not believe in the power of shamans, but he was curious about the tricks they used and decided to learn them in order to expose shamans as frauds. He started hanging out with shamans until one asked him to join the group. He learned how to dissimulate, how to vomit, and how to eavesdrop, all considered essential shamanic skills. He was especially adept at extracting a concealed tuft of down from his mouth after throwing it up covered with blood that

came from biting his own tongue. This “bloody worm” would be presented to the patient as being a pathological body he had just sucked out of the sick one, through the skin, for example, but without breaking it. Soon Quesalid had all the evidence he needed for an exposé on a major scale. But then a sick person asked him to cure his sickness, the patient having dreamed that Quesalid was just the man for the job. He cured the patient and became known as a powerful shaman.

Quesalid explained that his patient simply believed in him. But then he visited a neighboring group of Koskimo Indians, where, instead of using the trick of the fake bloody worm pathogen, the local shaman simply spat on his hands. Quesalid was skeptical still, especially when the Koskimo spitting technique didn’t work a cure. So he asked permission to try to cure the Koskimo patient using his own Kwakiutl bloody worm (i.e., concealed tuft of down and tongue-biting) technique. He did so and his patient proclaimed herself cured. Quesalid had further adventures, sometimes with unpleasant consequences for fakers other than himself, and Lévi-Strauss drew the only sensible conclusion: “Quesalid did not become a great shaman because he cured his patients; he cured his patients because he had become a great shaman.”[104]

In case this example and the commentary on the position of Quesalid are taken as nothing but an expression of an anthropologist’s love of paradox, consider the remarks of Jan Huizinga regarding St. Francis of Assisi:

> St. Francis of Assisi revered Poverty, his bride, with holy fervor and pious ecstasy. But if we ask in sober earnest whether St. Francis actually believed in a spiritual and celestial being whose name was Poverty, who really *was* the idea of poverty, we begin to waver. Put in cold blood like that the question is too blunt; we are forcing the emotional content of the idea. St. Francis’ attitude was one of belief and unbelief mixed. The Church hardly authorized him in an explicit belief of that sort. His conception of Poverty must have vacillated between poetic imagination and dogmatic conviction, although gravitating towards the latter. The most succinct way of putting his state of mind would be to say that St. Francis was playing with the figure of poverty.[105]

Huizinga went on to point out that Francis’s entire life was filled with play-factors and play-figures, “and these are not the least attractive part of him.” Readers of Huizinga’s book will recall that

play, even in puppies, was not merely physiological: it was significant; it meant something.[106] One need not explicate Huizinga's account of play to acknowledge that one of its essential aspects was that the player was aware that he or she was playing. There was no reason to think that Quesalid was unaware of the game he was playing, which meant that playing the trickster was not the same as being a fake. They exemplified different stories, different narratives, and so conveyed different meanings.

The two great roles shamans typically play are those of healer, such as Quesalid, and psychopomp, a guide or companion to recently deceased souls in the afterlife. The shaman can play these roles, Eliade said, because, in his ecstatic experience, he can "abandon his body and roam at vast distances, can penetrate the underworld and rise to the sky."[107] Indeed, the ability to pass from one cosmic region to another, from earth to heaven or to the underworld is "the pre-eminent shamanic technique."

> This communication among cosmic zones is made possible by the very structure of the universe . . . the universe in general is conceived as having three levels—sky, earth, underworld—connected by a central axis. The symbolism employed to express the interconnection and intercommunication among the three cosmic zones is quite complex, . . . But the essential schema is always to be seen, even after the numerous influences to which it has been subjected; there are three great cosmic regions, which can be successively traversed because they are linked together by a central axis. This axis, of course, passes through an "opening," a "hole"; it is through this hole that the gods descend to earth and the dead to the subterranean regions; it is through the same hole that the soul of the shaman in ecstasy can fly up or down in the course of his celestial or infernal journeys.[108]

The mystic shamanic communication among the three realms was expressed in architectural structures such as ziggurats, but also in trees and bridges or the smoke-hole (and smoke) of a tipi or a yurt. Indeed the notion of a cosmic center or *omphalos*, did not end with shamanism and the mystic cosmic flights of shamans but reappeared historically, whatever the degree of compactness and differentiation of experience and symbolization.[109] The ability of the shaman to use the *axis mundi* as a flight path could easily transform the shaman into a one-person *omphalos*. For the many nonshamans, the center of the world, the Delphic *omphalos*, for example, was a site that permitted them to send offerings,

prayers, or messages to the gods, whereas for the shamans it was the starting point for flight: "Only for the latter is *real communication* among the three cosmic zones a possibility."[110] Thus what for the rest of the community remained a cosmological ideogram was for the shaman a mystical itinerary. For members of the audience of a shamanic séance, the shaman's presence would very much seem to be the real presence of a one-person cosmic *omphalos*.

The three cosmic zones were zones of a whole, which is why, as Åke Hultkrantz observed, shamanic ecstasy or trance was *not* a mystical union with a cosmic-transcendent divinity that one finds in "the ecstatic experiences of the 'higher' forms of religious mysticism."[111] Rather, shamanic ecstasy was intracosmic. By traversing the structure of the cosmos, namely, its three zones, the shaman reaffirmed the unity of the cosmos, which we have called, following Voegelin, "the primary experience of the cosmos." To use the language of political science, shamanic experience, *sensu lato*, was a playful imaginative symbolization of a compact experience of a structured cosmos. Whether it bore a family resemblance to the experiences symbolized in cave art is the next question to consider.

Shamanic Practices in the Upper Paleolithic?

Salomon Reinach was probably the first French paleoscientist to suggest that cave art reflected shamanic activities.[112] Likewise, an early interpretation of the images at Lascaux discussed them in terms of shamanism.[113] Clottes was later led to consider the shamanic hypothesis because, he said, he was "seduced" by the theories of David Lewis-Williams.[114] In more scientific language, Clottes declared Lewis-Williams to be "without any doubt the researcher who in the past thirty years has done the most to change our outlook on rock art and to bring about a better understanding of the society that produced it."[115] To understand Clottes's enthusiasm for, and adoption of, the shamanistic hypothesis, we must first consider the argument of Lewis-Williams.

J. David Lewis-Williams (b. 1934) is a South African. His undergraduate degree was in English and geography with a minor in social anthropology, at the time dominated by the structural-functionalism of Radcliffe-Brown, Malinowski, and Evans-Pritchard. His graduate studies were in anthropology. During the

1960s, he specialized in the study of San or Bushmen rock art, initially categorizing San imagery in terms of several a priori types: What animals were represented? Did they look at each other? Were human images present? and so on. As did Leroi-Gourhan, he used punch cards to record the data he collected. One fine day he raised the question: What did these images mean? And he drew the obvious conclusion: whatever they meant, "numbers do not point to meanings."[116] As has been true of many social scientists who began their professional life attracted to quantitative analysis, he discovered his real interest was in reality and how it was to be understood. Accordingly, Lewis-Williams concluded that "behind numerical recording undertaken in the hope that questions will present themselves once all the results have been collected is, quite simply, an enormous waste of time and energy."[117] To state the obvious, Lewis-Williams was also an outsider as much by his citizenship and location as by his training.

During the 1970s, he began his examination of the notebooks of Wilhelm Bleek and Lucy Lloyd written a century earlier and devoted to recording San myths and proverbs as well as to describing San art. At this time he also met Megan Biesele, an American anthropologist who specialized in studying the northern San, and she introduced him to San ethnography. Lewis-Williams was particularly interested in San ritual rather than everyday San life. Despite the many and mutually unintelligible San languages, "there were parallels in rituals and beliefs," but they were more fundamental "commonalities in idiom and symbolism." His next step was to connect the ethnographic commonalities to San rock art, which Lewis-Williams called the "'fit' between the ethnography and the images."[118] In order to do so he had to rely on the skill we have called connoisseurship. One of the first insights he made was to discover the significance of what we have called a consubstantial cosmos and the compact consciousness of it. As he put it, "Once the unity of San cosmology, myth, and spiritual experience is appreciated, it becomes clear that the received anthropological categories of mythology, religion, folk tales, and so forth are unhelpful. They fragment a seamless unity and create unnecessary debate."[119]

During the 1980s, Lewis-Williams discovered the field of "cognitive archaeology," associated with Colin Renfrew,[120] and then several neuropsychological studies of "altered states of consciousness," or ASCs. These studies indicated to him that some

of the *forms* apprehended in an ASC were "neurologically controlled" even though the *content* or meaning of such formally similar visions was not neurological but cultural. ASCs therefore involved both cultural and cross-cultural elements, and, he believed, constituted a way to avoid both relativism and reductionism.[121] Thus began his renewed study of the place of shamans in San society, specifically with a healing power induced by a "trance dance" that, in turn, conditioned an altered state of consciousness. Such dancing built up a healing power that eventually enabled the shaman to "die" and visit the spirit world where the healing took place that was later manifest in the curing of a sick person in the ordinary world.

As is true of many anthropologists, Lewis-Williams was also interested, albeit remotely, with the Upper Paleolithic art of western Europe. In 1972, he met Leroi-Gourhan at a Valcamonica conference, which annual event we discussed in earlier chapters dealing with König and Marshack. At the request of the South African archaeologist Jeannette Deacon, Paul Bahn arranged for Lewis-Williams and Thomas Dowson, his South African colleague, to visit the decorated caves in the Dordogne. Later Bahn introduced Lewis-Williams to Jean Clottes. Eventually, in a series of books, Lewis-Williams developed an ambitious three-pronged argument that began with a consideration of the Upper Paleolithic caves, which may be summarized as follows: (1) modern human behavior depended more on changes in consciousness than on changes in intelligence, particularly so far as the ability to conceive of "alternative" or imaginary realities; (2) all "religions" are based on changes in consciousness through meditation, rhythmic movement, sensory deprivation, drugs, and so on; (3) "religion" in that broad sense is intimately connected to social change.[122]

Lewis-Williams thought he avoided both relativism and reductionism. In his words, he sought to move beyond a "surface narrative" in the direction of a "deeper" understanding of what was "really" going on in shamanic consciousness. For this reason he focused on the neuropsychological anomalies that caused the ASC. We will discuss the limitations of this approach, along with other criticisms, in the following section. The present task is to describe his argument regarding the applicability of the shamanic hypothesis to cave art.

In 1988, Lewis-Williams and Dowson first provided an account of the hypothesis in a major international publication,

Current Anthropology. They began by posing a straightforward, fundamental, and very large question: "What is the meaning of Paleolithic art?" To answer it, they developed "a model for addressing Upper Paleolithic signs that avoids simplistic ethnographic analogy," such as was offered by Breuil in his discussion of the bearing of contemporary "primitives" on prehistoric peoples, "and the impasse of induction from internal analysis," such as was offered by Leroi-Gourhan's "structuralism."[123] The research derived from their previous work on the San "where the shamanistic nature of the art has turned attention to altered states of consciousness." The San were "particularly favoured" because (1) neuropsychological research can explain the forms of certain imagery; (2) the meaning or content of those forms can be established by ethnographic investigation of the meaning of San rock art; and (3) notwithstanding the absence of ethnographic information regarding the humans who produced the Upper Paleolithic art, "a neurological bridge affords some access to the Upper Paleolithic."[124] By considering "the nervous system is a human universal" in the sense that "by the Upper Paleolithic, it was much the same as it is now," the authors would avoid the errors of "simplistic ethnographic analogy."[125]

As the title of their article indicated, Lewis-Williams and Dowson were concerned with Upper Paleolithic signs rather than representational or "iconic" imagery. By "entoptic phenomena" they meant "visual sensations derived from the structure of the optic system anywhere from the eyeball to the cortex." They made additional distinctions that need not concern us, and they made a distinction between entoptics and hallucinations, which have no foundation in the optic system but are founded in the mammalian nervous system more generally. In short, the formal aspects of ASCs were common to human beings; the content was culturally variable. Moreover, an ASC was also "the most important and overriding feature of shamanism." What followed was a description of six common entoptic forms, seven general principles that governed their perception, and three broad stages by means of which ASCs developed.

They concluded from this suitably complex model that a "significant component" of Upper Paleolithic art "derives" from ASCs and that many of the Upper Paleolithic signs in the caves "depict entoptic phenomena" in various transformations analogous to those known from San (and Coso) art. They also

made it clear that they were not arguing that the art was composed when the artist was in an ASC, though such activity was perhaps possible, nor that San and Upper Paleolithic "religions" were identical. On the other hand, "because shamanism is so pervasively associated with foraging societies . . . in the Upper Paleolithic this association probably had at least some features in common with what we understand by shamanism."[126]

In their response to this "exploratory rather than conclusive model" the authors indicated that they were not attempting to "prove" anything inasmuch as proof was "appropriate only to mathematics and unimpeachable deductive arguments." They were trying to make a "best-fit" argument. They argued that their model "makes sense" of the images of Coso and San art so they were "encouraged to apply it to Upper Paleolithic art." To use the language developed earlier in this study, they offered a plausible narrative, based on the "mechanisms" described in neuropsychological research, to account for analogies between contemporary San art and Upper Paleolithic art. Finally, they argued that their hypothesis, model, or narrative "does not have to explain *all* data instantly before it can be adopted." All it needed to do was "explain more data better than competing hypotheses. It then provides a platform for addressing outstanding issues."[127]

A few years later, Lewis-Williams gave a talk at Montignac to commemorate the fiftieth anniversary of the discovery of Lascaux, and he dealt directly with the "methodological bridge" that could link San and Paleolithic art. On this occasion he argued that "in part" ASC research could help archaeologists and paleoanthropologists avoid both naïve ethnographical analogy and empiricism.[128] That same year, 1990, he and Dowson published another paper that applied the shamanic hypothesis to San and Paleolithic art.[129]

They began with a simple question: "When San artists were painting, to what were they applying their paint?" Was it a "meaningless rock surface" or a "significant" one?[130] Upper Paleolithic cave walls had long been understood as integral parts of cave art.[131] Likewise, Lewis-Williams and Dowson argued, "San artists used the rock face to give the impression of depictions entering and leaving the wall of a rock shelter."[132] To which observation they asked: What was the "possible significance" of this feature of San art and what did it mean for

the “support on which the paintings were executed,” that is, the actual surface of the wall? Having observed that paintings appeared to enter and leave cracks, were folded into concave right angles, or were fitted into hollows and facets of the rock surface, they raised the obvious and commonsensical next question: What, if anything, did this observation mean?

San ethnographic information indicated to Lewis-Williams and Dowson that the paintings were used by shamans to help them on their spiritual journeys, thus transforming “the walls of rock shelters into animated screens of powerful imagery.” More specifically, the “holes and inequalities in the rock surface” may have appeared to the shaman in a trance “to be entrances to tunnels leading to the spiritual world.”

The actual San images were culturally conditioned in the sense that elands and antelope were depicted rather than musk oxen, deer, aurochsen, mammoths, or cave bears, but one way or another they incorporated elements of another reality. More generally, if their interpretation were correct, the San imagery represented the experience of transiting the rock surface, which in turn suggested what the practice of painting meant to the San. Not that the paintings were made during a transit/trance but that “painting was a ritual act that employed two principal elements, each with its own range of significance: paint and rock face.” The paint was ritually prepared and had its own power; the rock face was not a neutral surface to which the paint was applied “but rather the gateway to the spirit world” that creatively and so mysteriously interacted with the paint. In short “rock shelters were in some sense a veil, a ‘painted veil,’ suspended between this world and the spirit world.”[133] Accordingly, the out-of-body travel of shamans took them through the rock face “veil” to the spirit world.

Once San art was understood as expressing a shamanic “order,” the conventional categorization of the imagery, as dangerous or tame, looking right or left, and so on, could be rejected as irrelevant. Likewise if the Upper Paleolithic art also expressed shamanic experiences, the order discovered by Leroi-Gourhan was also misleading. The reason, Lewis-Williams said, was that shamanic art did not consist of a left/right balance or complementarity. Rather, for San art, and possibly for European cave art, “order obtains at right angles to the rock face, not just across it as in Western pictures. The right-angle order extends beyond the rock face in both directions.” Their account of

shamanic order was complex. On the one hand, it extended from the spirit world behind the rock face to the depiction of images on the rock face. Those images were both manifestations in the common or ordinary world but also the appearance of visions apprehended by the shaman on the other side of the rock face in the spirit world. In other words, San rock art "is in essence three-dimensional in the sense that its 'meaning' and its 'composition' lay in part beyond and in front of the rock face in dimensions invisible to Western viewers." The task of the artist was thus a ritual task. As others have argued without stressing either shamanism or ritual, "it is as if the animal is hiding in or behind the rock; the 'artist' has to release it or lure it out by carefully adjusting the position of his or her lamp and then adding a few strokes."[134]

In June 1994, Lewis-Williams and Clottes attended a rock art conference in Flagstaff, Arizona. Clottes invited Lewis-Williams to collaborate on a study of Paleolithic art found in the European caves. Lewis-Williams readily agreed, and by October 1995 the joint visits to the caves began along with the testing of the applicability of the shamanic hypothesis to Paleolithic art. Or rather: "We set out to encounter the shamans in the caves."[135] Beginning from the position that "shamanism . . . responds better than any other to certain particulars of the art of the deep caves," which *ex hypothesi* Lewis-Williams's previous arguments had secured, a confirmation of it might be anticipated. Indeed, much of the text of *The Shamans of Prehistory* is devoted to summarizing the argument Lewis-Williams (and Dowson) had already made. Our concern here is with additions to the narrative of the shamanic hypothesis they made in the book.

The first addition concerned the shamanic experience. They adopted the by-now conventional view of Eliade regarding a three-tiered shamanic cosmos. In this context, the ability of shamans to fly to the heavens was balanced by their ability to descend into the underworld. Caves were entrances to the underworld, and the walls, ceilings, and floors of the cave constituted a veil or membrane between the physical underground and the cosmic underground, on the other side of which lay the spirits that filled the underworld. Moreover, for what we earlier described as the compact consciousness of Paleolithic humans living within a consubstantial cosmos, the physical presence of a human being in an underground cave was

indistinguishable from the spiritual presence of a human being in close proximity to the spirits of the cosmic underground. This was why the cracks, nodules, ledges, hollows, and bulges were significant and why they were incorporated into the images, giving them a three-dimensional appearance.

In terms of the model of an ASC used by Lewis-Williams, which moved from geometric visions to hallucination, the transitional stage, which he called the "vortex," was particularly significant for cave art because it "drew" the shaman into the underworld and so into the depth of the trance. The vortex experience may be accompanied by sensations of darkness, constriction, difficulty in breathing, and so on. Entry into a cave was therefore a physical enactment of a spiritual experience. It may also be accompanied by "social isolation, sensory deprivation, and cold" that assisted the shaman in entering into a trance. "During the Upper Paleolithic, entry into an actual cave may therefore have been seen [i.e., experienced] as virtually the same thing as entry into deep trance via the vortex." The "hallucinations induced by entry into and isolation in a cave probably combined with the images already on the walls to create a rich and animated spiritual realm." In addition, they reiterated the importance of the common experiences of the life of foragers, particularly cosmic rhythms and the presence of specialists skilled in discerning those rhythms, namely, shamans.[136]

Turning to the questions of a shamanic understanding of the caves, the authors reiterated the argument concerning the complex relationship among images, ensembles of images, ASCs, cave topography, social conditions, and cosmology. As a consequence, they said, each cave was a complex shamanic ritual area that probably was sequentially related, in the sense that some art was meant to be seen (often near the cave entrance) and other images were nearly impossible to view (often near the end of the cave), which meant that the act of creating the images in the depth of the cave constituted its significance. Between the visible and the invisible were "images born of shifting chiaroscuro." In these images the artist may hold the image in his or her power inasmuch as "a movement of the light source can cause the image to appear out of the murk." At the same time the image would hold the creator in thrall inasmuch as he or she must keep the light source in the same place: "Relax, and the image retreats into the Stygian realm from which it was coaxed." More than any other images, these chiaroscuro creations "of light

and darkness point to a complex interaction between person and spirit, artist and image, rock and spirit-animal."[137]

Many observers of cave art have noticed that the paintings were not portraits of "real" animals in realistic landscapes, no matter how exact the anatomical details were rendered. The authors explained that this attribute was present because the images were "visions that were sought in a subterranean spirit realm for their supernatural potency and the help they could give shamans" and were not in any sense intended to be depictions: "The ways in which many of the images were made and conjured out of the rock face suggests that the 'artists' were *re-creating*—in some sense re-dreaming—their visions and fixing them on the membrane through which they had materialized. A richly painted cave therefore did not simply contain a number of pictures of animals. It contained many visions made manifest and fixed by painted and engraved lines."[138]

A novel conclusion the authors drew from their understanding of the caves as ritual centers and of the art as shamanic was that, to put it bluntly, a big, lavishly decorated cave was an expression of spiritual and of material power. Their conclusion seemed to combine a Durkheimian view of religious experience with a contemporary notion of the major caves as "aggregation sites."[139] A large cave that combined both decorated "public" spaces and decorated hidden nooks, such as Lascaux or Chauvet, could also combine a ritual space for social groups larger than extended families and as "sanctuaries" to which initiates might repair for ASC experiences. Such chambers "were—paradoxically—conspicuous yet hidden displays of religious, and no doubt associated economic, power and influence." Moreover, such unequal power relations "were probably underwritten by different degrees of exploitation of the shamanic cosmos. The most highly decorated caves proclaimed the owning group's privileged access to and knowledge of the underworld."[140]

For those such as Clottes and Lewis-Williams, the great insight that followed from the shamanic hypothesis was that it accounted for the discovery of ASCs as a "resource" whereby "some people were able to lay claim to special knowledge and special insights that set them apart from, and probably above, others."[141] Whether such a utilitarian, not to say self-interested origin, for spiritual insight was on the surface highly dubious—after all, the authors themselves noted that shamans were both drawn into the "vortex" and chose to continue their journey. It is necessary,

therefore, to consider the arguments of the critics of this hypothesis.

Criticism

When a new hypothesis is advanced in science, whether the science is natural, social, or historical, the expectation is that the innovators will face resistance in the form of criticism. That is how science as a common enterprise proceeds, whatever the motives of critics. Certainly, Lewis-Williams and Clottes could not have been surprised at the response to their argument. Yet, apparently, they were. One reason, it seems to me, is that they held to a naïve though common understanding that science is a matter of method.[142] The corollary Lewis-Williams drew and to which Clottes evidently acceded was that "although there are many diverse cultures in the world, there is today only one kind of science." Indeed, "for the material world in which we live, there is only science." Accordingly, "we must look to the material world for evidence that there is a spirit realm." As a consequence, only "religion" could impinge upon "science," since there was, for science, nothing strictly speaking to impinge upon with respect to religion—save to explain the material causes of fantasy and other ASCs. Lewis-Williams's final conclusion was entirely predictable: "Science does not attempt to answer questions about the meaning of life. . . . In fact, the questions are meaningless."[143] Such an opinion, which originated in the Enlightenment and rose to great prominence by the mid-nineteenth century, has been obsolete in political science since at least the mid-twentieth. As Voegelin (summarizing Aristotle) put it: "Science is a search for truth concerning the nature of the various realms of being. Relevant in science is whatever contributes to the success of this search. Facts are relevant in so far as their knowledge contributes to the study of essence, while methods are adequate in so far as they can be effectively used as a means for this end. Different objects [of study] require different methods."[144]

Since their naïve assumption regarding method was also held by many critics of the shamanic hypothesis, the overall discussion was not entirely satisfactory or conclusive. Indeed, the participants seldom penetrated to an analysis of the relevant principles of philosophical anthropology. To see the limitations of this nevertheless interesting controversy, let us begin with the opinion that "science," in this instance, neuroscience, aimed to

adhere to the methods of chemistry and physics in order to explain the workings of consciousness, which was understood to be "a notion of sensation, created by electro-chemical activity in the 'wiring' of the brain."[145] This "consciousness," according to Clottes and Lewis-Williams, existed on what they called a "spectrum" extending from "alert consciousness" to ASC hallucination: "Alert consciousness is the condition in which people are fully aware of their surroundings and are able to react rationally to those surroundings." It is not, however, easily described because people also tend to drift toward "inward" states, which Lewis-Williams called "reflective." Beyond reflection on this metaphorical "spectrum," lay daydreaming, dreaming, and deep trances. "In these states people believe that they are perceiving things that are, in fact, not really there; in other words, they hallucinate."[146]

To understand what Clottes and Lewis-Williams meant by hallucination, we must look more closely at the proposition just made. It may mean that, on closer inspection, a thing perceived turned out to reveal characteristics different from those that appeared in the initial experience of perception or, more radically, that something perceived by a person did not exist at all. Either way, the judgment regarding hallucination or error necessarily depended on control experiences of the potentially or actually existent thing perceived. Such a judgment obviously could not pertain to nonperceptual modes of consciousness, including experiences of imaginative participation in a narrative regarding, say, the meaning of life. In other words, if consciousness were restricted to perceptual consciousness, nonperceptual experiences were necessarily meaningless, which was simply the dogmatic reaffirmation of an initial assumption. Whether one accounted for this taboo on the grounds of a prior commitment to the conceits of positivism or simply attributed it to a kind of blank ignorance regarding philosophical questions was secondary. The result was the same: the nonapprehension of the full amplitude of reality. Neither Clottes nor Lewis-Williams seemed to be aware of the problem.

Critics of the shamanic hypothesis first took issue with the argument of Lewis-Williams and Dowson in "The Signs of All Times." A second wave of criticism arrived after the publication of *The Shamans of Prehistory*. Paul Bahn, a participant in both controversies, has been coherent and informed in his remarks. Let

us consider his arguments.[147]

Bahn's initial comments were made in *Current Anthropology* in response to the Lewis-Williams and Dowson article.[148] Despite his admiration for Lewis-Williams's contribution to understanding rock art, Bahn said he was going to play the devil's advocate. Having admitted to being "totally ignorant of the nonarchaeological literature" on the problem of phosphenes and entoptics, he nevertheless wondered whether the claims regarding the universality of these phenomena were true. And even if they were universally present today, "one still has to make the considerable assumption that the very first members of our subspecies, 30,000 years ago, had the same hallucinations as modern people," particularly because the "content" of early human imagery was evidently strongly influenced by culture. Second, although ethnographic analogy may be unavoidable ("even Leroi-Gourhan's approach relied heavily on the assumption that Paleolithic people thought like twentieth-century French structuralists"), Bahn was "uneasy" that the hypothesis relied on only two ethnographic studies. Third, the small number of shapes that could be drawn—dots, lines, grids, and so on—meant that nearly any mark could be interpreted as an entoptic phenomenon. Here the risk was one of developing another of those irrefutable all-embracing theories "that are no longer acceptable for prehistoric art."[149]

On the other hand, the authors claimed only that "some" images were fixed by persons in an ASC "and one can hardly argue with that." Second, he said, "most scholars would agree that shamanism and hallucinations" played some role in the production of art, though there was as yet no "solid evidence." And (again) even if there were more ethnographic support, that would not prove their hypothesis but only make it more "plausible." Even so, Bahn praised the authors "for stepping out onto such thin ice." In their response, the authors assured Bahn that "the structure of the human nervous system establishes a potential for entoptic phenomena that is universal." They were saying that the ice was thick enough to support their argument. They were wrong.

Over the next decade or so Bahn learned a great deal about phosphenes and entoptics from the nonarchaeological literature and about shamanic practices.[150] Eventually, however, he reached the conclusion that "we have absolutely no evidence whatsoever to link any Ice Age art to something like shamanism

except as a simple assumption."[151] Of interest in the present context is the discursive path that led him to his later judgment and to the response to his evidence and arguments by Lewis-Williams and Clottes.

In 1997–98, Bahn wrote two appraisals of Clottes and Lewis-Williams's book.[152] First of all, shamanic interpretations of Paleolithic images were not new. Many scholars have interpreted therianthropic figures, "sorcerers," or the famous shaft imagery and "unicorn" at Lascaux as representing various shamanic themes. Extensive ethnographic evidence, especially from Siberia, suggested that "cultures with shamans usually have a zoomorphic view of the world and things are seen and experienced in animal form." Accordingly, Paleolithic animal images would be best understood as "spirit animals" not portraits. This was why Bahn found Smith's 1992 speculation that shamanic practices may have been related to Paleolithic art to be plausible.

The Clottes and Lewis-Williams book, however, presented itself not as a more or less plausible narrative speculation but as something approaching a scientifically proven account. The volume contained an initial clear, straightforward, and factual discussion of Paleolithic art and the history of its interpretation leading to the conclusion that parietal art could not be the subject matter of a single explanation. But then the authors undermined their own commonsensical view by introducing the shamanic hypothesis and associated "theories" as providing an *explanation* for the production of the cave art. Dowson, who wrote the original article with Lewis-Williams, put it this way: "I believe that Southern African rock art is entirely shamanic."[153] Second, instead of making the commonsensical point that the parietal images were related to the rock face, they made the assumption that the rock face was an interface, now called a "membrane" rather than a "veil" between the ordinary world and the spirit world. The problem here was, as we have discussed already regarding the consubstantiality of the cosmos, that there was, for the cosmological consciousness, little differentiation between the two "worlds." Or, as Bahn pointed out, "such divisions between a real world and the spirit world scarcely existed in Bushman life."[154]

Bahn also criticized the "idiosyncratic reading" of ethnographic evidence from Central Asia, Africa, North America, Latin America, and Europe and raised a problem common to all "single model explanations: what would it take to falsify the

hypothesis?"[155] Bahn pointed out that strict adherence to a single theory is a "prophylactic against thought." Specifically, in order to postulate that all human graphic activity was initiated by a single factor, whether shamanic consciousness or some other ASC, the resulting "explanation is so adaptable that it applies to everything and simply cannot be invalidated. Nothing can be proved wrong; it is just claimed to be as the proponents wish."[156] Such a procedure was hardly scientific in a Popperian sense, as Clottes and Lewis-Williams claimed. It certainly had nothing to do with Aristotelian science. Moreover, when the text was released to the accompaniment of a massive advertising campaign claiming that, at long last, Clottes and Lewis-Williams had discovered the interpretive key to unlocking the enigma of rock art, then great damage was being done to genuine paleoscience.

In their response, Lewis-Williams and Clottes said that Bahn had taken their arguments out of context, ignored evidence they presented, and generally misrepresented their position.[157] They reiterated their view that science seeks explanation, not obscurantist, pusillanimous, and mindless contemplation. They also objected twice to his "excessive use of exclamation marks!" So far as I can tell, however, they did not answer Bahn's substantive criticism regarding the use of such an explanatory model (and I read their reply several times). Again, if I understood their response correctly, they simply reaffirmed the shamanic hypothesis. The editor, apparently appalled by the acrimonious tone of the exchange, declared it would not be continued in the pages of *Rock Art Research*.

It would, however, be continued. In 1997, Bahn also attended a conference devoted to shamanism and prehistory and to contemporary varieties of shamanism.[158] As with his earlier article, "Membrane and Numb Brain," the title of his contribution was self-explanatory: "Save the Last Trance for Me: An Assessment of the Misuse of Shamanism in Rock Art Studies."[159] Moreover Bahn was fully aware that the supporters of the shamanic hypothesis would have noticed his tone: "One of the most deeply-rooted instincts in British culture," he said, "is the urge to mock anything that smacks of intellectual pretention."[160]

Bahn revisited the "three-stage" neuropsychological theory that Lewis-Williams and Dowson advanced in 1988.[161] An examination of the neurophysiological and neuropsychological literature led him to conclude that it "has no basis in fact, and is not to be found in standard works on neurology." Second,

hallucination was not needed to account for rock art imagery. Third, even if hallucinations might have been the source of the imagery "there are many different kinds of hallucinations, and most do not involve any kind of 'shamanic practices.'"[162] Moreover, there were no criteria available to distinguish notionally hallucinogenic sources of imagery from notionally alert sources.

Next, Bahn considered the evidence of Siberian shamanic practices. According to Hamayon and Perrin, both of whom had undertaken extensive fieldwork, shamans did not, as Eliade said, enter an ecstatic state or a trance. As Lévi-Strauss noted, they perform a ritual or, in Bahn's words, "they are acting a part" or are "sham-men."[163] Moreover, since the rituals involved vary among different peoples, to expand a specific Siberian term to other cultures so as to include sorcerers, healers, magicians, soothsayers, clairvoyants, and so on has meant the term has become "virtually meaningless," which was also the specialists' criticism of Eliade's generalizations. Finally, Bahn made two commonsensical observations: (1) we have no way of knowing what the state of consciousness of prehistoric humans might have been—at least not in terms of any metaphorical spectrum; and (2) without being able to question the prehistoric artists, we cannot distinguish possible shamanic from nonshamanic imagery. Such a position, which seems to me to be self-evidently prudent, led "the 'shamanists' (since they dislike the term 'shamaniacs') constantly [to] claim that those who reject attempts to interpret prehistoric rock art [shamanistically] are 'pessimists,' and that one really needs to rise to the challenge. This is nonsense. 'Pessimist' is a word that idealists use to describe a realist, and it is simple common sense to recognize the limits of what one can do with prehistoric data."[164]

In their 1988 response to the comments in *Current Anthropology* to "The Signs of All Times," Lewis-Williams and Dowson claimed they had developed a "best-fit" hypothesis rather than a "proof" that might be disproved. In the language used earlier in this study, they claimed to have articulated a persuasive narrative. Bahn's response to such a claim was that the neuropsychological account of the "membrane" hypothesis and the shamanic hypothesis did not fit the data at all. Thus, whereas the shamanists "firmly reject theories of hunting magic or fertility magic" in favor of their own monolithic account, "in fact the number of therianthropes, or 'sorcerer' figures, or even of animals

apparently emerging from or entering walls is tiny. . . . In the context of the tens of thousands of images of Ice Age art, they are utterly insignificant." In fact, they can be made to appear significant only by focusing on "a highly selective and unrepresentative set of images."[165]

Arguably, the most devastating criticism was not that the trance/ASC/shamanic theory was useless in terms of interpreting Paleolithic art, but that it constituted "a denial of the human spirit." Once one adopted the "three-stage" model of trance, "no new thinking is required" because "it embodies a definition of rock art that freezes a culture," whether that culture was Upper Paleolithic or nineteenth-century Siberian. "Indeed, the theory essentially presents a single explanation for the rock art of all times and places." As a result it "embodies both monotone and aggression." The aggressiveness of shamanists, which originally earned them the now abandoned name "shamaniacs," was expressed in the tactic of labeling those who contested the shamanic interpretation of ethnography as racists, "the last refuge of the scoundrel," Bahn said.[166] In fact, however, as Bahn argued, the opposite was true. First of all, because there was clear ethnographic evidence that some rock art was *not* shamanic at all, "it seems demeaning to prehistoric Bushmen or Californians to pigeonhole all of their artistic production in this way—where every motif, every gesture, is automatically interpreted in a symbolic, metaphorical or mystical way. As Freud said, sometimes a cigar is just a cigar." Second, by linking shamanism to rock art, the interpreters "claim somewhat patronizingly, that most informants were not capable of articulating—or perhaps did not even know—the deeper meanings of their beliefs." In contrast, the researchers themselves alone were fully capable of retrieving the metaphors and hidden meanings of the "stunted testimony" of the artists. "This attitude smacks of neocolonialism and seems to continue the eighteenth-century practice whereby white Western scholars defined and analyzed alien religious systems." And third, whether you considered the art of contemporary indigenous peoples (or Paleolithic peoples) to be either childlike or deeply spiritual, it was the Westerner who gave it meaning and "in either case, their humanity is diminished."[167]

The reason why the shamanic hypothesis and associated psychoneurological arguments was condescending, neocolonialist, and so on was quite simple: "Shamanism is not a primitive, universal form of human religion," and those who produced the

rock art are not “simple, primitive shamanic peoples.” Yet that was precisely what was implied: simple primitives during the Upper Paleolithic or their contemporary analogues needed to hallucinate to produce art; we do not. Bahn concluded by citing with approval Kehoe’s appraisal that Lewis-Williams and Clottes had simply resurrected “the hoary Western assumption that if you aren’t a literate, city-dwelling citizen of a major nation, then you are unsophisticated, emotional, primitive, and unable to figure out the difference between dreams, hallucinations and reality.” That is, Clottes and Lewis-Williams accepted the progressive nineteenth-century opinion “that their human ‘living fossils’ are *less evolved* than civilized people.”[168]

In 2002, Bahn coauthored with Patricia A. Helvenston, a neuropsychologist, “Desperately Seeking Trance Plants: Testing the ‘Three Stages of Trance’ [or TST] Model.” It had initially been intended as a scientific critique and was submitted to the *Cambridge Archaeological Journal* (*CAJ*), which had published several papers by proponents of the TST model. The authors hoped for publication in the October 2002 issue, since they were convinced that the rock art community and other archaeologists seemed to be unaware of the fallacies involved with the TST model and the shamanic hypothesis with which it was associated. The editors of the *CAJ* were unable to publish the piece in the October issue, so Helvenston and Bahn “resorted to the methods of some earlier scholars in deciding to publish the paper ourselves.” The paper appeared as a booklet under the same title.[169] The booklet soon went out of print, but *CAJ* did publish a summary.[170]

The summary made the following points regarding the limitations of the TST model proposed by Lewis-Williams and Dowson. The first problem was that the only trance states consistent with the TST model were drug-induced, the drugs being mescaline, LSD, and psilocybin. Only plants containing LSD were available in Paleolithic Europe, but they were toxic and there is no evidence that they were deliberately used. Other psychotropic plants available in the Paleolithic did not produce a TST experience. Indeed the entire model was dependent on the experiments first undertaken by Heinrich Klüver during the 1920s, which looked at the effects of mescaline on humans, and led Klüver to conclude that although some hallucinations conformed to the TST model (also proposed by Alexandre Rouhier), many did not. Second, naturally induced trance, of

which there were around seventy different kinds, from ritual dancing to self-hypnosis and meditation, did not conform to the TST model at all. They also documented the misuse (or idiosyncratic use) of neuropsychological terms, such as "entoptic," and incorrect citation of neuropsychological sources as if they supported the TST model when they did not.

In the longer version of "Desperately Seeking Trance Plants" (chapter 1 of *Waking the Trance Fixed*), Helvenston and Bahn stressed and documented that the TST model was based on obsolete thinking in neuropsychology, akin to looking at manic-depressive illness in terms of ancient humors or pretectonic geology to explain the fossil record. They then summarized current neuropsychological thinking regarding trance states, which provided a great contrast to the "obvious neuropsychological fallacies" promoted by Lewis-Williams and Dowson.

Of the two commentaries published in the same issue of the *CAJ* that summarized their criticisms, one, by John Bradshaw, a neuropsychologist, largely agreed with Helvenston and Bahn. The second, by Christopher Chippindale, was something else. To begin with, he never contested a single fact that the authors introduced. On the contrary, Chippindale discussed a couple of counterfactual possibilities that ignored the TST model entirely. He seemed to have overlooked the whole point of Helvenston and Bahn's essay, which was to criticize that model. About half of his commentary was devoted to his animadversions on what he called the "social context" within which "all research and all research knowledge" was articulated, namely, the "research community." Here he noted that some members of this community accepted the Lewis-Williams and Clottes account, whereas Bahn, "an influential commentator on rock-art research, has been denouncing the ideas as an absurdity invented by 'shamaniacs.'" Having been invited by the *CAJ* to discuss the Helvenston and Bahn "essay," Chippindale anticipated making a conventional analysis of the "research issues." "Sadly," he said, the "research issues" had been overshadowed by the "social context," which was unusual but also "deeply unsatisfactory."

Bahn noted (as we mentioned) that one of the traditions of British culture was to mock intellectual pretentiousness. Another tradition, deeply embedded in British academic culture, is a tendency to speak so indirectly as to succeed in almost complete obfuscation—and I speak as an outsider, but one with extensive

experience as a participant-observer. The concluding six paragraphs of Chippindale's commentary exemplified this tradition to near perfection. Rather than discuss the "research issues," which commentators were expected to do, he said he would discuss the "social context" in sufficient detail to enable the "*CAJ*'s knowledgeable and sensible readers to draw their own conclusions." Apart from his sadness at what he read in the pages of the *CAJ*, he provided no further justification beyond flattering his readers, who would somehow get his message. Chippindale was not, he said, concerned about specific persons (presumably Bahn) but "about attitudes of a certain kind" (i.e., *bad* attitudes) and their consequences, namely, "a habitual discourtesy to colleagues" (perhaps expressed in amusing titles to critical articles?). He also seemed to be distressed that the authors "insisted they comment on the commentators so they will have the last as well as the first word." Moreover, he objected to the possibility that they would do so "at a length extending to exactly the same and necessarily quite large number of words as I used," or rather, as he would have used had he discussed the "research issues." Instead, he developed a stratagem to forestall a lengthy response by Helvenston and Bahn, namely, abandoning a "longer comment" on the "research issues" in favor of "these shorter remarks" on the "social context."

Chippindale then concluded this remarkable piece with the following observations:

> *CAJ*'s readers, unable in this way themselves to have access to the pertinent facts of the social context, are still entitled to know their consequences: my inclination is to discount Helvenston and Bahn's arguments entirely, as likely to be too much based on partisan presuppositions rather than on open-minded consideration of the material information.
>
> I regret I cannot publish here the good reasons that gradually have brought me unhappily to that dismaying and dismal view.[171]

In their response to Chippindale, Helvenston and Bahn restated their understanding of the "research issues" and why the TST model was groundless.

Chippindale seemed to have understood his role in this controversy as an institutional defender of the *CAJ* and of its editorial decision to publish so many papers, over the years, in support of the TST model and the shamanic hypothesis. His

complaint that Helvenston and Bahn would have the last, and the first, word might imply that he was unaware that the response by the authors of a paper that elicited comments had become an academic convention. For one so institutionally well connected (he listed three institutional affiliations at the end of his comment), his ignorance seems highly doubtful. Rather, his complaint announced that the editors of the *CAJ* were remarkably broad-minded for allowing such ill-tempered remarks as those by Helvenston and Bahn to appear in their pages where collegial courtesy (or agreement) was expected. Moreover, by identifying Bahn as an "influential commentator" and their contribution as an "essay," Chippindale (much as Randy White said of Alexander Marshack) indirectly conveyed the information that they were not properly credentialed with a university affiliation. This is why, in a later review of Bahn's *Prehistoric Rock Art* published by Cambridge University Press in 2010, he ended his rather acerbic comments by "noticing that this book, with its repeated denunciation of the academics and their academies, is published by the authority of a university press."[172]

The next issue of the *CAJ* carried three additional responses to the Helvenston and Bahn article along with a contribution by Lewis-Williams. Jean Clottes accused the authors of "a sleight-of-hand trick" and provided additional sources to support the notion that the caves were themselves a "hallucinogenic milieu." After analyzing these new authorities, Helvenston and Bahn concluded: (1) caves were not a hallucinogenic milieu because actual hallucinations in caves were rare; (2) when hallucinations did occur they were nearly always related to extreme exhaustion and not to being in the caves per se; and (3) even under those conditions, hallucinations were still rare.[173]

David Pearce, a member of the Rock Art Institute, where Lewis-Williams was the director for many years, said that Helvenston and Bahn's "attack" on the TST model, "that endogenous mental imagery can be divided into three stages," was "based on a fallacy," namely, that three stages constitute "an ineluctable progression." Lewis-Williams and Dowson, however, said that "these three stages are not necessarily sequential." Helvenston and Bahn replied that they never assumed an ineluctable progression, not least of all because they quoted the original qualification set forth in Lewis-Williams and Dowson's "The Signs of All Times." Even so, Helvenston and Bahn continued, "all proponents of the TST model" (1) stress the

importance of geometric figures early in the trance, followed by more complex imagery; (2) all papers supporting the TST model consider the three stages of trance to be "typical"; and (3) all emphasized all three stages as being required for trance experience per se. Thus, "whether or not there is an experience of all three levels of trance, for the majority of individuals is clearly *not* irrelevant to Lewis-Williams and Dowson's central argument."[174]

Finally, David Wilson, who wrote and produced a BBC documentary on TST, remarked that several points made by Helvenston and Bahn were "directly contradicted by what I learnt in making the film." He then quoted the words of several of these authorities from the documentary script and indicated that, in his opinion, Upper Paleolithic cave paintings were "religious paintings and they reflect religious experience." It was also his opinion that religious experience "inevitably" involved ASCs, which "people of a skeptical and scientific bent used to call 'hallucinations.'" He concluded with a challenge: "They may not like the 'shamanic' approach, but they offer no alternative." Helvenston and Bahn ignored Wilson's loose reasoning and made the following response: (1) they did not discuss the broad and unfocused question of whether trance might be part of the lived experience of Upper Paleolithic peoples (presumably what Wilson referred to as "religious experience"); (2) "we have concentrated specifically on the type of trance predicted by the TST model"; (3) of the many varieties of ASC, shamanism was only one, and it was "the specific emphasis on shamanism that we have criticized"; (4) the South African data upon which the TST model was based were "misrepresented" by Lewis-Williams; (5) Wilson's comments that they offered no alternatives "merely expose a profound ignorance of the literature concerning Ice Age art; we have indeed put forward convincing evidence that some Paleolithic cave art is strongly religious in motivation, based entirely on solid data, such as its location, rather than on spurious speculations, outdated or erroneous neuropsychology, and distorted ethnography."[175]

They concluded by recalling a query by Pearce: Why do "papers that criticize misrepresentations of early research continue to be published?" Pearce considered the criticism of the TST model and the shamanic hypothesis to be misrepresentations. Helvenston and Bahn provided their own answer. Why, they asked, were the model and the hypothesis still being debated?

"The answer is simple . . . it took years for true specialists in shamanism, and subsequently neuropsychologists, to become aware of the distortions of their data that had been perpetrated in a completely different [academic] domain; and at the same time, the simplistic but erroneous picture of the past presented by the model's adherents has inevitably appealed greatly to the media and to uncritical minds. That is why it is still regrettably necessary to expose the fundamental errors in this approach."[176]

Later in this same issue of the *CAJ*, Lewis-Williams provided his response to Helvenston and Bahn's original (2002) *Desperately Seeking Trance Plants*.[177] No purpose would be served in considering his remarks in detail since they did not address Helvenston and Bahn's criticism. Instead Lewis-Williams raised several peripheral matters and engaged in subtle obfuscation along the lines of Chippindale. To give a couple of examples: first, Lewis-Williams said the authors were "apparently unaware of neuropsychological literature" that supported the TST model without drug stimulation, namely, migraine scotoma, hypnagogia, and hypnopompia. In fact, they discussed these conditions in *Desperately Seeking Trance Plants* and in "Waking the Trance-Fixed."[178] The problem was that in fact these nonhallucinogenic drug-related ASCs do *not* fit the TST model: "We simply have never found any other trance (except the one induced by these three hallucinogens [mescaline, LSD, and psilocybin]) that conforms to the same pattern and content as the trance put forward in the TST model, and let us hasten to highlight, neither has Lewis-Williams or any other proponent of that Hypothesis, although at this point they have had two [additional] years to do so."[179] Second, as with Chippindale's attempted put-down of Bahn, Lewis-Williams described Helvenston as "a neuropsychologist who had used hypnosis and other trance states in the treatment of patients for over fifteen years," the implication being that she was simply a clinician who was way out of her depth discussing serious research matters.[180]

The balance of "Waking the Trance-Fixed" discussed three additional problems. First, the authors disposed of the opinion that carbon dioxide was a hallucinogen, as Lewis-Williams suggested in *The Mind in the Cave* and Jean Clottes endorsed in a review.[181] Second, they provided a methodological criticism regarding the applicability of the TST model to rock art in the western United States and South Africa. On the one hand, Lewis-Williams and Whitley first had to distort, misrepresent, or

misinterpret the ethnographic data, and then they simply projected the TST model onto it so that they could confirm the shamanic hypothesis. Once again, this was not how science of any kind worked.

Conclusions

The first and most obvious conclusion to be drawn from the story of the TST model and the shamanic hypothesis was that the Anglophone world of paleoscience could generate controversies and disagreements fully as lively as any emerging from the Francophone milieu.

Second, the great achievement of Leroi-Gourhan, as of Breuil before him, had its own unanticipated consequence. Audouze and Schlanger noted, "Over the past twenty-five years, the study of prehistoric art in France has been undertaken in a purely descriptive and technical way, emphasizing the individuality of the decorated caves, each being considered as a unique type of sanctuary."[182] This kind of decline Morris Janowitz called the "dead hand of competence."[183] The result of the "technical" or formular reading of Leroi-Gourhan's originally very imaginative approach was a kind of scholarly fashion where Leroi-Gourhan's "structuralism" was applied seriatim to a succession of caves and cave art.[184] The discovery of Chauvet and the evident antiquity of its art meant that Leroi-Gourhan's dating scheme was widely considered no longer to be accurate or even adequate.

Third, the TST model and the shamanic hypothesis, at first blush, produced a plausible narrative. Lewis-Williams and his colleagues (Dowson, Clottes, and Whitley) applied their neuropsychological model to two different sets of rock art, which they were convinced on ethnographic grounds had been created by shamans. The close correspondence between the model and the art increased their confidence that the model could also be useful in interpreting Upper Paleolithic art, especially since both South African and North American rock art apparently led to the same phenomenon, shamanism. These two quite distinct cultural traditions were nevertheless maintained by human beings with identical nervous systems that were also shared by Upper Paleolithic humans. To the supporters of the TST model and the shamanic hypothesis, this argument was the very opposite of cultural imperialism. Moreover, they thought that by eschewing strict proof for "best-fit" criteria they avoided both biochemical

reductionism and scientism. Finally, they used the authority of Eliade, unquestionably a first-rate scholar of comparative religion, to sustain the argument that, for the remote ancients as for contemporary foragers, the relation of the sacred to human life was far more intimate than it was among industrial and technological moderns. Preeminent among the ritual and spiritual specialists were shamans. It took only a little imagination to understand that these specialists might access the spirit world by transiting the membrane of the rock face. Those who remembered their Latin could take etymological comfort in knowing that trance and transit both came from *transitus*, "passage." Trance is the transit to the spirit world.

The criticisms made by Helvenston and Bahn were scientifically credible and definitive. Moreover, so far as I can tell, their criticisms have never been answered.[185] Certainly they have had no effect at all on the writings of either Lewis-Williams or Clottes, apart from perhaps toning down their confident enthusiasm that they were doing science and their critics merely displaying bad manners. The whole story of the TST model and the shamanic hypothesis constitutes an excellent example of how a simple, plausible narrative can dominate a genuine and critical scientific discourse (in this case by Helvenston and Bahn). The absence of scientific evidence to support the narrative of Lewis-Williams, Clottes, and their supporters did not seem to matter. Of course, this happens in political science all the time in the form of ideology.

The imperviousness of the TST model and the shamanic hypothesis to scientific criticism was exemplified in a general study by Lewis-Williams and Clottes written after the criticism of Helvenston and Bahn had been published and discussed. In an article on Paleolithic art and religion, the authors proposed a broad description of shamanism "not tied to any one ethnographically recorded community." They soon digressed into a discussion of altered states of consciousness that was somehow derived from an altered nervous system, the shamanic transit of "thin membranous walls," and so on. It may be true that "there was a complex interaction between [i.e., among] the topography of the caves, mental imagery, and historically-situated image-making by individuals and social groups that, through time, built up and changed the spirit world both conceptually and materially," but the authors still seemed unaware that they were advancing a highly speculative thesis.[186]

The fact that the TST model and the shamanic hypothesis were impervious to scientific criticism was what enabled its supporters to constitute a new orthodoxy or, in political science terms, a new ideology. So, for example, in Lawson's otherwise useful book, he devoted eleven paragraphs over four pages to discuss the hypothesis and model and one paragraph to Bahn that ignored his reasoning and evidence and merely reproduced Bahn's justifiably colorful conclusions.[187]

For the record, Paul Bahn was not a lonely, cranky commentator whom Clottes and Lewis-Williams considered rude for criticizing their speculations. Roberte Hamayon, a specialist in shamanic studies, wrote an amusing review of *The Shamans of Prehistory*. It was quite odd, she said, for Jean Clottes to collaborate with David Lewis-Williams on such a project because "he is reputed to be serious and occupies a position of considerable responsibility." The chapters he wrote bore out these characteristics, but those written by Lewis-Williams did not. They showed only that Lewis-Williams knew little about shamanic studies. "Accordingly, the purpose of this review is not polemical —there is no evidence brought forward by which to debate his alternative interpretation, which is to say that the contribution of D. Lewis-Williams does not belong to the category of a scientific discipline (independent of the requirements of writing for the general public)." It belonged more to the category of New Age speculation than to science. Moreover, and contrary to the authors' claims, the neuropsychological model was reductionist in the extreme if it were to be taken seriously. On the other hand, "that the productions of the human mind have a neurological basis—is at once incontestable and empty of meaning," at least in the absence of a larger philosophical anthropological argument.[188]

In their response, Clottes and Lewis-Williams deplored Hamayon's "attack" and her tone, which "at least in France" was unusual. Instead of offering evidence to refute her criticism, the authors referenced their own work on the TST model, on shamanism, on trance, and on its applicability to Paleolithic cave art. They said (again) that Hamayon was abusive and sarcastic and had produced a caricature.[189]

Two brief comments by way of conclusion. The first is almost self-evident: the TST model and the shamanic hypothesis were simply the most recent version of a grand theory in the study of

prehistoric art. That is, it was a successor to Breuil's hunting magic and fertility magic notions and to the "structuralism" of Leroi-Gourhan. Whether another "fashion," as Clottes called it, ever succeeds the current one remains to be seen.

A second development provides a transition to the final chapter of this book. In a review of Lewis-Williams's *A Cosmos in Stone*, Jarl Nordbladh, a Swedish archaeologist, noted that, if Lewis-Williams wished to avoid a "Western" bias, as he asserted in his preface, he would have to abandon Western science and, more particularly, Western neuroscience.[190] A couple of years later Thomas Dowson, of all people, suggested the same thing and provided an interesting argument in favor of paying attention primarily to the self-interpretation of the San.[191] "The debate is at an impasse," he said, and "is clearly going nowhere." In order to "move on," we should follow Tim Ingold, whom we discussed in chapter 5. Why? Because, according to Ingold, the distinction between history and evolution or culture and nature is unsustainable. Thus, the narrative of the history of art was fundamentally flawed, and the search for the origin of art was futile. To the extent that shamanism was implicated in the origin of art, it was unnecessary. Moreover, it was fatally ambiguous. On the one hand it referred to a "cultural construct, or a cosmology, of certain non-Western societies" involving the mythical or religious construction of the world in the context of rituals and beliefs that reproduced that society in that world. On the other hand, "it is a construct of Western intellectuals" who understood this cultural practice as one of many ways of understanding nature.

These and other equivalent dichotomies, such as humanity and nature or body and mind, were "a legacy of the Enlightenment" and systematically distorted the "being-in-the-world" of humans and animals as it was understood within "indigenous ontologies." Properly understood, Dowson said, foraging was not just appropriating nature in order to live and sustain culture but involved the circulation and regeneration of supernatural forces. Thus the common practice of thanking the animals and asking their forgiveness for showing up at the end of my spear or running into my bullet (the practice still exists among contemporary hunters). What Dowson had recollected, it seems to me, was the experience of consubstantiality within the cosmos. He described "supernatural potency" as being "everywhere" in the San being-in-the-world, which indicated also

that he had been able to recover the compact consciousness associated with the primary experience of the cosmos. Considering where he started two decades earlier, that was quite an achievement.

CHAPTER 7

Concluding Reflections

Upon hearing a talk by Marie König in October 1968, Eric Voegelin realized that political science, which to him included philosophy of history and philosophy of consciousness (his philosophical anthropology in other words), had a new area of political reality to explore. He had already discussed the preclassical civilizations of the Bronze Age Mediterranean and the agricultural empires of the ancient Near East. König indicated to him that he could apply his philosophical anthropology to the symbolism of even more historically remote experiences. In principle, Voegelin's argument regarding the experience and symbolization of political reality and his understanding of compact and differentiated consciousness could bring some clarity to the earliest human evidence available to science.

König was a specialist in Celtic numismatics. Her study of Celtic coins and the obvious contrasts they made with Mediterranean coins of the same era led her to consider the possibility that the patterns of symbols on Celtic coins reflected a tradition far earlier than what was represented on the familiar coins of Greece and Rome. How early? She argued that Celtic symbolism originated in the earliest period of European humanity. That meant looking to the Neolithic and Paleolithic past in search of a persuasive account of the history by which, at least in principle, these very early symbols could have been transmitted to the much later period when Celtic coins were used commercially. The aesthetic preference of contemporary European scholars for the imagery of Mediterranean coins over Celtic ones was, she argued, irrelevant to their symbolic

significance. The conclusion she drew from her argument regarding the symbolic continuity of the Celts and much earlier humans was that those living in the Stone Age were as capable of abstract speculative thinking as their successors and that this capability was expressed in Upper Paleolithic rock art, cave art, and mobiliary art.

Was her narrative persuasive? Not really. Rather, it was pretty much ignored. In light of contemporary developments, chiefly in France, ignoring König's argument was particularly regrettable. Her reasons for rejecting both the notion of a progressive development of humanity and the use of ethnographic studies of contemporary "primitive" peoples to discuss by analogy the significance of Paleolithic humans could have brought considerable clarity to contemporary French paleoscience.

König's focus was on what she understood to be the cosmological symbolism that she discovered in pictograms found within rock-shelters in the Fontainebleau forest. That the practitioners of normal paleoscience did not accept much of her argument should occasion no surprise since the petroglyphs of Fontainebleau hardly looked like art in any conventional sense of the term. Moreover, her discussion of this symbolism as expressing a spiritual dimension of Paleolithic humans was bound to cause misgivings among hard-nosed positivist practitioners of a decidedly nonspiritual archaeological science.

And yet, it was also clear from the evidence that the aurochsen and bison and deer were not menu illustrations. So what were they? Her basic hermeneutical assumption was that they were the visible expression of invisible and internal spiritual experiences. To which the normal paleoscientist would reply: Were they? Really? Where is your evidence? The answer to such a question would be to question the premise of the questioner. As Laming-Emperaire later said: consider it as a working hypothesis. Then, if one examined the materials in light of König's approach, how persuasive was the result? What was the narrative generated when one examined a stone ax as the product of the action of *Homo spiritualis*, not *Homo faber*? To the objection that such an approach was "speculative," the response was obvious: so too was the assumption that stone implements were merely useful tools and thus solely the product of *Homo faber*. Besides, the oldest artifacts—spheroids—were nonutilitarian. Moreover, they were plausibly interpreted as serving some kind of cultic purpose. Indeed, König pressed her "speculation" even further: spheroids

were an obvious representation of the sphere of the cosmos.

Once again the question posed by normal paleoscience (how do you know?) could be deflected only by returning to the more basic question: Did it make sense as a working hypothesis? And if such a narrative were plausible, did the subsequent arguments König drew upon regarding the structure of the cosmos also make sense? The notion of a structured cosmos, with an above and below and with human being as an "in-between" of the two segments or sectors of the whole, was familiar from later accounts of cosmological symbolism; König had simply proposed a more or less plausible account of the prior constituent elements of this well-known symbolism.

Likewise her discovery/creation of the cardinal points, the course of the night sky, and the phases of the moon were advanced as plausible accounts, not compelling scientific truths. Moreover, owing to the participatory rather than perceptual nature of the interpretive experiences involved, it was impossible to specify whether her account was a discovery or a creation for the simple reason that there was no "outside" to the participatory experience. In order to understand such an argument it was necessary imaginatively to take part in the interpretation. It is perhaps also worth emphasizing that the lunar symbolism expressed in the horns and perhaps the tusks of images of animals in the caves was a particularly imaginative possibility. In other words, König's interpretive approach was not to argue that the phases of the moon *were* the expression of a death-and-resurrection story or a story of a rebirth but that lunar changes *could be interpreted* that way. That was, she argued, the only kind of persuasiveness to which the prehistoric materials lent themselves. Her more fundamental question was this: What did this interpretation tell human beings about themselves?

That König's argument was compatible with Voegelin's philosophical anthropology and especially with his account of the compactness and differentiation of consciousness may be significant for political science but was unlikely to matter much for archaeologists and other paleoscientists. Nor did her discussion of what we now call paleoastronomy have much of a chance to influence the thinking of normal paleoscience. Indeed, at the time paleoastronomy was scarcely respectable. These issues were less a problem for the second outsider we considered, Alexander Marshack.

Partly as a consequence of his energetic personality, partly as

a result of an embrace of conventional paleoscientific rhetoric, Marshack's discussion of lunar calendrics commanded the attention of the scientific community. He was unfazed by criticism and confident that his scientific analyses would eventually be accepted as true. Both Marshack and König were not members of the academic community of paleoscientists. Because they had not been socialized through their professional education to understand what the "real," that is, conventionally acceptable, problems were, they were able to see problems that no one had previously considered. In addition, Marshack pioneered the use of a microscope to study mobiliary art and new photographic techniques to study cave art.

As we argued in the opening pages of this book, one way or another it was necessary to develop some kind of philosophical anthropology in order to focus the analysis on human problems. By following his own inductive method, Marshack effectively postponed dealing with this problem until he had published his major book, *The Roots of Civilization*. In his later work, he continued his microscopic analysis but also devoted attention to the problem of the "cognitive beginnings" of human art production. His focus was on neurophysiology, so the philosophical sophistication of his argument was limited. Nevertheless, his later focus on what he called "storied symbolization" introduced new problems into paleoscience, which was itself a major achievement.

His initial insight, that markings on mobiliary artifacts were lunar and seasonal calendric notations, was interpreted by Marshack as a symbolism that expressed and so documented changes in the cognitive capacity of humans. Eventually, Marshack discovered that these calendrical devices contained a much more complex notation than was needed to document lunar changes. Continued examination over the years of several well-known examples of mobiliary art led him to recognize that the complex patterns of inscription constituted a combination of lunar and solar notations complete with lunar intercalations. Obviously, such a device might be understood as an anticipation of something like a Neolithic calendar that would be useful for calculating dates to begin spring planting, for example. But why would anyone in a foraging society have such a concern? The obvious conclusion therefore was that these calendric artifacts served no contemporary utilitarian purpose but were connected to a ritual of some kind or to symbolizations of meaning. That is,

they were ancillaries, perhaps a mnemonic for the recitation of stories to account for large-scale seasonal changes to which humans both in agricultural and foraging societies were compelled to adjust. In Voegelin's language, Marshack had adumbrated the experiential origins of cosmological myths.

When humans took part in ritual activity or myth- or storytelling, they were necessarily and playfully aware that ritual and mythtelling were distinct from ordinary activity. Marshack accordingly argued that ritual experiences and myth- and storytelling activities included imaginative acts that integrated, in this context, human and cosmic being. The degree of freedom implied by the notion of play—since ritual activity and storytelling could only be freely undertaken—expressed the historical reality of a differentiating human consciousness. Differentiating from what? One way of understanding the problem, if not exactly providing an answer to the question, would be to acknowledge that, although animals may play, they do not practice rituals, or that, although animals may be aware of themselves, and certainly are aware of the difference between male and female, they are not self-conscious and do not tell stories to one another or speculate on what male and female differentiation *means*. One way or another some kind of distinction between animals and humans was made by humans. Marshack called this differentiation of consciousness a change in human cognitive capacity. That is, rather than consider the problems of imaginative and participatory consciousness, Marshack focused instead on the neuropsychology of human cognition and perception. Despite this rejection of participatory consciousness and a "speculative" narrative, he was nevertheless convinced that the result of these cognitive changes was the creation of meaningful stories about "the sky, the seasons and the biologic processes of man and nature," which is to say, the cosmos within which humans exist.

During the late 1970s, Marshack emphasized the complexity and distinctiveness of Upper Paleolithic "symbol systems" that nevertheless showed recurrent similarities or equivalent "semantic contents." These problems led him to reconsider the significance of the hominin sequence. He was concerned not with the "origin of consciousness" or some similar philosophical question but with how consciousness differentiated historically. In this way Marshack was led to consider the differences and more importantly the similarities between Neanderthals and

Sapiens. Here he introduced the concept of "potentially variable behaviors," which he understood to be more or less cognate with the biological concept of exaptation, to account for the specific cognitive and symbolic achievements of Sapiens. This insight, it seems to me, was a philosophically inelegant equivalent to Kantian purposiveness.

Two things stood out about Marshack's work. The first was expressed in the account of his experience late in life looking west from the Abri Pataud. He realized that he was as capable as the much earlier humans whom he studied of experiencing the reality constituted by the natural periodicity of the cosmos. Second, he sought to understand earlier humans on their own terms rather than in terms of contemporary scientific preoccupations. This difficult hermeneutic strategy led him to introduce terms such as "time-factored" or "potentially variable behavior" to evoke somewhat indirectly the ambiguous subject matter of his investigation. Perhaps most interesting for our purposes was his emphasis on storytelling both in the Upper Paleolithic and in his own work. His focus on Upper Paleolithic ritual led him to infer that eventually it had to be governed by storytelling. He was fully aware that his own scientific work constituted a story too.

König and Marshack met once at a Valcamonica conference, after which Marshack indicated to Movius that he thought she was both traditional and romantic, neither of which were terms of praise. König, in contrast, greatly admired Marshack's discovery of lunar calendrics. In 1979, Jesper Christensen commented on a paper by Marshack and mentioned several of König's concepts and arguments. The exchange between Marshack and Christensen indicated quite plainly the differences in their approaches.[1] Marshack advanced the standard or conventional view that genetic selection could explain the parallel development of language and the ability to symbolize. "If," he said, "we assume the presence of certain regularities in the phenomenological and relational worlds of early man," which in more commonsensical language meant: if we assume that early humans experienced the reality of a cosmos, then "similarities in the symbolic products referring to these [regularities] may not be surprising," for the obvious reason that experiences of the cosmos could be expected to be expressed in broadly equivalent ways. "But," Marshack continued in this same sentence, "this does not solve the problem of a possible dispersal of cultural strategies and

modes." No; it did not. However, Marshack was referring to a historical problem for which historical evidence was needed, not an interpretive one for which an argument regarding equivalence of experience and symbolization was needed.

In his comments, Christensen introduced König's notations: the two, the three, and the four. The three and the four, which could be represented by lines or dots or cup-marks and scratches, were for her symbols of temporal and spatial order within the cosmos. As for the two, Christensen wrote, it marks "precisely . . . the point where the visitor loses sight of daylight" at Bayol cave.[2] Thus, "the 'two' signs here mark the boundary between the realms of light and darkness, between sky and earth." Moreover, he continued, the repetition of designs and of extensive handling studied by Marshack with the aid of a microscope indicated a ritual recreation of the cosmos. Christensen then concluded, on the basis of Marshack's evidence and König's hermeneutics, that "the symbolic numbers of the Paleolithic material are readily explained on the basis of this idea," namely, "that 'two' and 'four' signify the events whereby the present world order was constituted: the separation of sky and earth and the fixing of the cardinal points."[3] In addition, because for König, the "three" indicated a cyclical renewal of time evident in the phases of the moon, the repetitive and ritual act that constituted the beginning of the cosmos also began time (again). That is, König's numerical notations—the two, the three, the four, and so on—were a means of representing, according to Christensen, the ritual reenactment of primordial creation.

It seems to me that Marshack did not understand what Christensen was arguing. His "Reply" reiterated his objection to using contemporary ethnographic material, which is fair enough. He also objected to applying contemporary philosophical anthropological insights to the ancient evidence. All we can do, Marshack said, was "make certain determinations concerning the strategies involved" in the "accumulation and use" of images. The reason for this limitation was an absence of context and syntax or "linguistic reference." However, if we begin from an experiential or participatory understanding of consciousness, are things necessarily so bleak? Is it in fact true that we lack contextual referents? After all, *all* these symbols express the experience of participation in reality, and as another of his commentators, Arne Johansen, observed, we have to start somewhere.

König would have agreed with Marshack that "it was a

fundamental error of early attempts at interpretation of Upper Paleolithic image and symbol to assume that if the image was recognizable it could be compared analytically to images known ethnographically."[4] That was why they both rejected the interpretation of cave imagery as evidence of hunting and fertility magic. For Marshack, however, Breuil's error was repeated by König in that her discussion of the two, the three, the four, and so on was an example of "numeration." But this was not what König, or Christensen for that matter, said. The two was a symbol of, for example, night and day, light and dark, and the like; the three of the rhythmic changes of time as measured by the moon and such; and, obviously, one would not use the two to represent the phases of the moon since there are three of them; the Neanderthals were buried in four-sided graves, not triangles, and so on. Christensen called the numerical symbols "representations," "designs," "devices," "signs," and "forms," and always within quotation marks, but never an arithmetic number. Likewise König always discussed "the" two, "the" three, and so on. In Marshack's language, they were referring to numerical notations.

For Marshack, however, "the road to even partial understanding of early symbolism is difficult and requires systematic methodical firsthand study of the materials and the traditions of which they are a part, in terms both of contemporaneous complexity and of regional developments and changes in the traditions." In other words, it was acceptable to trace traditions and styles, but we had no way of knowing or even guessing intelligently what they meant. König disagreed.

These two highly imaginative scholars, both working outside the conventions of the professional academy, did, however, agree on one thing. Marshack said, "The traditions under study are all late examples of symbolling capacities whose origins are far earlier than any of the artifacts or materials that will be available for study." By relying on something like a philosophical anthropology, König and certainly Voegelin were not simply interpreting images "on the basis of what they look like to us," as Marshack believed. It is true that König did not simply note the existence of calendric notations, as did Marshack; she also integrated this work into a wider scientific enterprise. It would no more be a criticism of Marshack's work to move beyond his achievement than for Marshack to diminish the significance of the archaeologists and paleoscientists who preceded him. That is simply how science developed.

The French history of prehistory and of paleoscience was lengthier than elsewhere in Europe. One of its interesting features was that from its nineteenth-century beginnings until the mid-twentieth century, French prehistorians were, like König and Marshack, mostly amateurs. In 1935, Henri Bégouën, professor of prehistory at Toulouse and eminent archaeologist, very much a professional, reminded his equally professional colleagues that they would do well to abandon a "petty pedantry that would deny scientific credit to those unpretentious persons who dedicated themselves to science without having obtained a leather-bound diploma." He then listed the names of prominent prehistorians, many of whom we have already encountered, along with their occupations: Tournal (pharmacist), Boucher de Perthes (customs official), Lartet (lawyer), Piette (judge), Massenat (businessman), de Vibraye (landowner), Cartailhac (lawyer), Breuil and the Bouyssonie brothers (clerics), Capitan, and Saint-Périer (doctors) and Peyrony (schoolteacher). None had gained his diploma in prehistory, "and yet they were masters of the subject."[5] As was true of so many of their contemporaries, most of these early amateurs were also committed nationalists. The difficulties that Sanz de Sautuola had in having Altamira accepted as genuine were proof enough. And yet, the later professionals did aim at being more systematic than their predecessors.

For example, once the cave art and mobiliary art were recognized as being very old, the next two questions seemed obvious: How old was it? And what did these very old artifacts mean? The dates of some of the portable art could be secured by ordinary stratigraphic means because it had often been found in association with stone tools and extinct animal remains that could be dated in terms of their relative cultural position. Radiocarbon dating of organic material around mobiliary artifacts has sometimes been possible, especially for recent finds. But as Marshack pointed out, since much of this art had been polished by extensive handling, it might also have been moved around and preserved so that the place where a piece was found may bear little relationship to its actual provenance.

For different reasons, wall art has also often proved difficult to date. Apart from problems associated with connoisseurship, namely, that experts often disagreed, and even if those disagreements have been occasionally exaggerated, radiocarbon dating where it was possible did not always mean agreement either. As with mobiliary art, radiocarbon dating told only the

age of the tree that eventually wound up on the wall, not the date of composition—though it is not a wild assumption to think the two dates were close. Calcite covering of images may indicate considerable age, but since calcite can form at different rates even in the same cave, it is not entirely reliable. Rock falls and rising sea levels provided their own problems. Because not all wall art was found in caves that once were inhabited, a singly dated occupation layer may have nothing to do with the art. And, of course, there are caves with extensive overengravings and superimposed drawings. All of these problems have given rise to interesting debates, with no end seeming likely.

When one considers the second question, What did the art mean?, matters move from difficult to intractable. The early notion of *l'art pour l'art* seemed to most observers hardly applicable to the complex decorations of the major caves. Abbé Henri Breuil used ethnographic analogies to bolster his interpretation of the art, especially of cave art, as expressing three kinds of sympathetic magic: hunting, destructive, and reproductive magic. They were connected insofar as reproductive fecundity and defense against dangerous predators would make a successful hunt more likely. The premise of Breuil's theory, which was hardly ever discussed, was that the cosmic whole was consubstantial and that magic was a technique of moving between the pragmatic world of food acquisition and the spiritual world focused on the significance of life, and the complex constituted by the life of the hunter and of the hunted as an ensemble remained a millennially constant mystery that commanded respect, both then and now.

Max Raphael, even more of an outsider than König or Marshack, combined a variety of Marxist anthropology with the sensibilities of an art historian to emphasize the compositional aspects of Paleolithic art, which he took to be a reflection of a kind of totemic relationship among humans or among human clans. He illustrated his argument with a remarkable interpretation of the Altamira ceiling. Compared to Breuil, his approach was based on a more complex understanding of human being. Again, however, the "speculative" attributes of his argument ensured he would remain widely ignored by the increasing numbers of professionals and thus little more than a footnote to normal paleoscience.

Annette Laming-Emperaire and André Leroi-Gourhan have often been discussed together and in association with the

structural social anthropology of Claude Lévi-Strauss. Leroi-Gourhan seems to me to be more of a structuralist than Laming-Emperaire, notwithstanding his great originality as a thinker and widespread contributions to archaeological practice. As did Raphael, he argued in favor of a deliberate composition of mural art that combined the placement of specific images, in the light of an entrance or in the deep, dark depths, for example, with the shape and topography of the cave. Moreover, he developed a bioanthropology that served in many respects as a philosophical underpinning to his interpretation of Paleolithic art. Of particular significance for our purposes, he considered the cave art to constitute a "mythogram," literally a "story-drawing," that expressed a binary organization among the animal images that in turn reflected differences of male and female, life and death, and so on. He argued persuasively that the "preoccupations" of Paleolithic humans clearly went beyond the material, but also that it was not possible to distinguish art from religious image or magic symbol. This "difficult philosophical problem," he said, must simply be acknowledged rather than solved. It seems to me that this was Leroi-Gourhan's way of acknowledging the consubstantiality of the cosmos, or an expression of the primary experience of the cosmos, to use Voegelin's term.

Leroi-Gourhan's interpretation of cave art provoked considerable resistance from Breuil and his defenders. Laming-Emperaire, it seems to me, put their dispute into proper context. First, she also supported the thesis that cave art was compositional and not a collection of separate images. That is, it was characterized by internal connections or an internal logic. She too avoided reliance on ethnographic analogies, but was far less insistent than Leroi-Gourhan that they must never be used. And she argued in favor of a Paleolithic mythical narrative, since lost, that would account for the mythographic imagery of the caves. In her last writings before her premature death, she advanced several insights and research proposals that, unfortunately, have never been developed. In an argument similar to that of Raphael regarding Altamira, Laming-Emperaire suggested with great boldness that a worthwhile working hypothesis would link the cave art to Paleolithic social organization, namely, kinship and related exchanges, as two aspects of a common and balanced cosmological symbolism. That is, she combined sexual dualism with structure in a working hypothesis that pointed to a comprehensive cosmological

symbolism that, unfortunately, she never developed in detail.

Reading the work of Jean Clottes leaves one with the impression of an author who combined a kind of boyish, even naïve, enthusiasm with the cold, hard certainty of an *haut fonctionnaire*, incapable of error. His enduring achievements were to secure and oversee the archaeological teams that explored, described, and published their accounts of Cosquer and Chauvet caves. The controversies surrounding these events illustrated the problems associated with official, which is to say, bureaucratically controlled, archaeology.

Clottes's embrace of the shamanic hypothesis, first advanced by David Lewis-Williams and Thomas Dowson, was inherently controversial for two reasons: (1) the concept of shaman and shamanism was contested by experts; (2) the psychology of "trance" that was said to sustain it was highly dubious. If you accepted the interpretation offered by Lewis-Williams, which brought together two quite disparate and highly specialized scientific literatures, the result was plausible and persuasive narrative that appeared to account for a great deal of Upper Paleolithic art without relying on direct ethnographic analogy or upon the abstract generalizations of structural analysis. A closer inspection of their sources, their arguments, and their logic by teams of scholars combining expertise in shamanic studies, Paleolithic art, rock art, ethnology, and neuroscience raised a sufficient number of critical questions that, following some rather fraught and dogmatic words defending the shamanic thesis, later formulations of the shamanic interpretation of caves were much more qualified and much less sweeping. What to Lewis-Williams and Clottes seemed to be a persuasive scientific narrative turned out to have a weak or nonexistent evidentiary basis made plausible by what Lonergan would have called a pattern of happy coincidences.

From Breuil to Clottes, interpretations of Upper Paleolithic art have been tempted by, or were susceptible to, grand theories. The complex ambiguity of the evidence, and for the most part a defective or incomplete philosophical anthropology have left us with little more than a collection of cautionary tales. Bahn was no doubt correct to note that the shamanic hypothesis was "just another stage in the history of prehistoric art studies."[6] Even so, the shamanists still preserved the insight regarding the consubstantiality of the cosmos. In this context, for example, Clottes remarked on the "fluidity" of Paleolithic experience that

enabled humans to move between what to our differentiated consciousness was the everyday world and the spiritual world. Moreover, "the relationship between humans and animals is equally fluid: they are not so different from one another that links or assimilations between them should be unthinkable."[7] One way or another it would seem that the realities discussed explicitly and philosophically by Scheler, Jonas, Lonergan, and Voegelin were present in the Upper Paleolithic. This observation leads to a final question: What, then, can political science accept from paleoscience?

Marie König's last book was *Our Past Is Older: Ancient European Cult Caves*.[8] In 1979, Henry de Lumley had discovered a collection of Erectine skulls in a cave. The brains had been deliberately removed, which suggested a ritual activity of some kind. This would mean that the earliest evidence for human spiritual activity was dated to 340 KYA! Regarding the spiritual activity of Neanderthals, both König and Marshack argued that the Tata plaque and the Quneitra cortex were evidence of Neanderthal symbolic activity. The fact that these later artifacts were unique was unimportant. In Marshack's words, "statistically insignificant examples from the earlier Paleolithic record are crucial for an understanding of the evolution of the potentially variable human capacity for problem-solving and symbolling."[9] Marshack also showed that the Vogelherd horse, which could be securely dated stratigraphically to about 32 KYA, also showed evidence of "symbolic overmarking" and of long-term handling, which indicated it was much older, the end product of a lengthy tradition rather than a precursor to Leroi-Gourhan's "Style I." The decoration of Chauvet cave carried the same implications, notwithstanding the controversies over its age.

Leroi-Gourhan also maintained that there was continuity in Paleolithic art, though his stylistic sequence and associated dates needed revision.[10] Even if we included Neanderthals and Erectines in the sequence, lengthened continuity did not amount to a discovery of origins. Ingold pointed out, "There is, then, no point of origin when history began: no moment of emergence of 'true humanity.'"[11] When, nevertheless, a paleoanthropologist made the attempt to find human origins, the result was a paradox. Ian Tattersall, for example, distinguished between symbolic behaviors "and those that are merely 'intelligent.'" The capacity to symbolize, he said, was "a generalized and apparently

inexhaustible capacity for generating new behaviors when presented with new stimuli." But because Sapiens descended from a hominin that lacked this capacity, where did that capacity come from?[12] His answer seemed to be: there was no answer. "It is possible," he said, "to see that the origin of modern human consciousness must have been an emergent event, whereby an entirely unanticipated level of complexity was achieved by a sheer chance coincidence of acquisitions."[13] What this "chance coincidence" actually was remained unknown, notwithstanding extensive and abstract speculation about possible neural "mechanisms." Nor did Tattersall explain what an "emergent event" might be.

We discussed this problem in chapter 1. It remains important because symbolization, symboling, or symbolic behaviors appeared to have no analogue outside human beings. Tattersall's argument, which we have just summarized, and which was in many respects symptomatic of all efforts at accounting for modern human behavior by accounting for its antecedents, tried to square a circle. He was fully aware that human capability of symbolizing was new, but if not utterly new, then certainly orders of magnitude more frequent, in the Upper Paleolithic, which is to say that the *frequency* was new. If Upper Paleolithic cave and mobile art were understood as the culmination of a long cultural tradition, the problem of an *initial* symbolization remained even if it were pushed back to an earlier date.[14] How far back would be far enough? Whatever the date of the notionally "first" symbolization, it amounted to an unprecedented actualization of a capacity that of necessity was already there. And if the actualization of a capacity was, in fact, unprecedented, it makes no sense to look for precedents.

This meant that when dealing with modern humans, the ambiguity regarding the human species needed to be dealt with directly. We are, to be sure, animals, but as Nietzsche said in *Thus Spoke Zarathustra*, we are animals with red cheeks. And as Roger Scruton has argued, blushes are like tears because they are summoned by another. Even more, "only a rational being can blush, even though nobody can blush voluntarily."[15] The real problem with humans and every other being on the planet, past and present, is that we are as much discontinuous with other beings as we are continuous with them. We are biologically continuous, which is why it makes sense to speak of the genus *Homo* as being divided into several lineages or species. The

discontinuities, however, are not so much biological as ontological in the sense that human being constitutes a different kind of being, an observation that applied equally to Sapiens as to Neanderthals and perhaps even to Erectines. This was why Jonas used the term "metaphysical gap" to distinguish human and animal perception. Or, as we have stressed several times, the elaboration of a philosophical anthropology, whether explicitly or merely as an assumption, was unavoidable. Tattersall likely was expressing his awareness of the problem by introducing the regrettably underdeveloped term "emergent event."

Even in the absence of a well-grounded philosophical anthropology, a number of conclusions can be drawn from prehistorians and other paleoscientists regarding the significance of Upper Paleolithic symbolism. A generation or so ago the position of many paleoscientists was summarized by Ann Sieveking: although Paleolithic cave art had been known to Europeans for a century, "we still know little more about its meaning than the first discoverers surmised."[16] A couple of decades later, however, Steven Mithen observed that such an attitude "simply enables archaeologists to avoid asking questions about the human imagination, creative thought, and the symbolism of prehistoric art."[17] More recently, Clottes restated the earlier claims of unavoidable ignorance in a more subtle way: "The geometric signs in the painted caves . . . are devoid of any real meaning. Though their makers must have used them as symbols, the absence of any syntax means that these signs constituted neither a language nor a script. The ideas and perhaps the stories and religious practices behind them will always elude us."[18] To which position Purcell responded: "But that would be like rejecting, say a Constantin Brancusi sculpture or a Barnett Newman painting on the basis that it was non-representational, when in fact both artists were trying to convey the essence beyond the appearance." Besides, there *are* methods available and capable of furnishing intelligible interpretations of Brancusi and Newman, of the great images of aurochsen and mammoths, and of the signs that have so often been dismissed by paleoscientists as unintelligible.[19]

It is no doubt correct to start from the position that, if Paleolithic art contains a message, it "was not aimed at us" and "that we cannot understand clearly." That does not mean that we cannot understand anything at all about Paleolithic art. As Bahn said, a couple of pages after the quotation just given: "What it

comes down to, basically, is whether one is content to work with the art as a body of markings that cannot be read, or whether one wants to have stories made up about it!"[20] Either way, however, we must deal with a narrative, thus we ask, Is the available narrative persuasive? And why?

A second equally sensible starting point, again to quote Bahn, was not that Paleolithic signs and symbols had no meaning, but that they had many complex meanings, and "that is the nub of the problem."[21] In a similar vein, Michel Lorblanchet observed that "the everlasting freedom of Paleolithic art is an embarrassment to prehistorians," because prehistorians sought to understand *the* meaning of an image "but in fact it may have many."[22] For a compact human consciousness living within a consubstantial cosmos, matters could hardly be otherwise. Moreover, even before direct radiocarbon dating, several paleoscientists expected there to be considerable stylistic diversity rather than a single timeline for the development of a single phenomenon called "Paleolithic art." Over a period of 30 KY, a lot can happen, including both technical improvement and regression, as Raphael insisted many years ago. Accordingly, one may expect a great variety of styles to have developed over the centuries. Leroi-Gourhan was aware of this possibility, even though he was surprised by the sophistication of the carvings from Aurignacian Vogelherd, which he classified as Style II even though they dated from an era he identified as characterized by Style I.

Another complication followed from the acoustic properties of any particular cave. Given that it was often true that the areas with the most decoration were also areas with the best acoustics, some caves may have been initially selected for their sound qualities. The implication was that such caves could be used for singing and chanting or loudly reciting prayers.[23] Moreover, since humans alone among all forms of life undertake community dances, and because dancing increases emotional bonds, especially among participants, caves may also have been selected as dance halls.[24]

More broadly, the topography of the caves often conveyed a general meaning. To begin with, inhabited caves were seldom decorated and decorated caves were seldom inhabited, which suggested clearly enough that they were special venues for special conduct, such as rituals and mythtelling. Assuming the Paleolithic entrance(s) could be located, early explorers no less

than Leroi-Gourhan and Laming-Emperaire noticed that the art that could be viewed in daylight differed from the art in the dark depths. Relatively early the backs of the caves were called sanctuaries and were characterized chiefly as the location of painted or engraved figures rather than sculptures or reliefs. Leroi-Gourhan said, "It seems that the deeper inside the cave a sanctuary is located, the less often did people visit it. Occasionally one suspects that only one expedition took place," which would have given such deep places an even greater sense of mystery.[25] Accessibility, however, did not depend only on the amount of effort it takes to view the art but also on how well it is hidden and who gets to look for it. Since much Paleolithic art was located near the cave mouth and probably much more was in the open air (but has since vanished) location was significant, though the details regarding the nature of that significance remain unknown.

Even today, the experience of penetrating to the depths of a decorated cave is often the occasion of strange feelings, though not perhaps a trance or an altered state of consciousness. Among Paleoscientists this experience has often been reflected in the eloquence of their language. Michel Lorblanchet, for example, described cave art as a conversation among the cave, the wall, and the artist. "The rock does not just support the image," he said, "it participates in it intimately."[26] Marcel Otte similarly wrote of the "strange plastic messages" of the caves concerning "a dialogue between rock and thought, through which wild nature seems to be itself articulated by the contact of lines added to the rocky relief. The spirit of the Paleolithic message is here: natural and mute, it forms a group of signs disposed in harmony with the surroundings in which they are presented." The art evoked a "spiritual coherence" that was "guided by the topography and use of different places." The "dominant impression," he continued, "is that of an effervescence of mysticism founded on the mastery of natural forces, creating encoded scenarios that are displayed materially, by the image, as if to assure their effectiveness."[27]

Many paleoscientists have discussed the inventory of animal images present in the caves and those absent. Breuil noted the absence of periwinkles and concluded that periwinkle harvests did not require hunting magic to be successful. The nineteenth-century "amateurs" had already noted that the animals depicted were not the animals eaten. There were no images of everyday

life preserved on the walls, no images of reptiles or birds and very few humans. Leroi-Gourhan noted that no one ever "drew a frieze of lions and storks surrounded by hyenas and eagles."[28] Nor, as Clottes said, were there any representations of "the sun, the moon, or the stars";[29] according to Leroi-Gourhan, about half the animals represented were horses and bison. Those two statements would make perfect sense to König for whom horse and bison were images of the sun and moon.

Whether König was correct in her interpretation was secondary to her more general point, that the animals represented some kind of order and meaningful stability that would likely have been expressed in stories and myths. This was also what Leroi-Gourhan meant by a mythogram. Likewise, Lévi-Strauss once observed that the depicted animals were good to think about, not good to eat, a view shared by Lorblanchet.[30] Or again, Lorblanchet waxed metaphorical in describing Paleolithic art as "a kind of cosmic placenta, a primeval magma, where all creatures, living and imaginary, merge into formal games" that "express in symbolic terms the eternal bonds that unite all creatures."[31]

Lorblanchet's recovery of the consubstantial experiences that unite humans and animals by way of Paleolithic art was balanced by the account of Clayton Eshleman that differentiated the two. Eshleman is best known as a poet and translator. His book *Juniper Fuse: Upper Paleolithic Imagination and the Construction of the Underworld* incorporated his informed experience of the caves into poetry, narrative, and analysis.[32] We mention Eshleman's interpretation, as we did that of König, not so much to endorse it as to indicate that a persuasive narrative dealing with art invited imaginative participation. In terms of normal paleoscience, his remarks were also highly speculative.

Eshleman began his reflections on the significance of cave art with an "intuition" in 1970 at Combarelles cave that the images there were "motivated by a crisis in which Upper Paleolithic people began to separate the animal out of their about-to-be-human heads and to project it onto cave walls (as well as onto a variety of portable tools and weapons often made out of the animals themselves). In other words, that the liberation of what might be called autonomous imagination came from within a projective response on the part of those struggling to differentiate themselves from, while being deeply bonded to, the animal."[33]

Neanderthal consciousness, he claimed, provided the "seeds of

narrative," as was evident in their burial practices, but image-making by Sapiens was the result of a crisis "of the separation of the hominid from the animal to the distinct but related classifications of the human and the animal." Obviously there could be no classification without the experience of separation. Franco-Cantabrian image-making took place during a period when Cro-Magnons increasingly depended for their survival on animals and increasingly competed with Neanderthals for game. Moreover, the particularly harsh climatic conditions of the Late Pleistocene would have added to a sense of crisis.[34] "Seemingly suddenly," around 32 KYA, the Cro-Magnons started painting the "animalness they were losing (or really, had lost), yet were utterly dependent upon, onto the cave walls." Moreover, the expression of Cro-Magnon consciousness, which is to say, the self-consciousness of human awareness of not-being-animal (and perhaps not-being-Neanderthal), in Eshleman's argument, was a "fall" from the "seamless animal web,"[35] Lorblanchet's "cosmic placenta." Wightman made a similar observation: "It is reasonable to conjecture that being able to kill animals in ever more efficient ways made hominins keenly aware of the animality within themselves and of the humanity within the hunted animal—it was no longer the animal outside that was responsible, but the animal within."[36]

In Jungian terms, "prehistoric archetypes seem to us far less differentiated. This could mean that specific structures were not yet delineated so as to take on distinct characteristics of the mind."[37] This initial differentiation of consciousness (the animal/hominin separation in Eshleman's terminology), which was expressed in Neanderthal burials, also expressed the increased perilousness of life that was understood as less "catastrophic" for animals even though animals could be aware of their impending demise—as any contemporary hunter with a deer in the crosshairs knows. With Cro-Magnons' consciousness, a "swamplike churning" enhanced their awareness of biological peril that, Eshleman said, was "sublimated" by image-making.[38]

The alleged greater self-consciousness of Cro-Magnons, or their apparently more differentiated consciousness as compared to Neanderthals, meant that the caves were no longer just shelters but the "insides" of the earth, a kind of psychic and physical landscape. "Cave insides were marvelous and forbidding partially because of what they dramatized, or even magnetized, in the insides (body and soul) of the person groping through those

cavernous innards." Simply being within a cave allowed Cro-Magnons to participate in the transforming power of insides, which turned daylight into darkness. The difference between the daytime world of hunting and surviving and the darkness of the cave increased the gap between human and animal life. Awareness of this change, Eshleman said, was fraught with ambivalence. Tools and weapons and increased group coordination meant that human beings were "no longer fundamentally prey." Animals had become the prey of humans but also the source of a human arsenal. The hunter "used their bones and antlers to help him kill them." But at the same time animals were humans' teachers and so filled with mystery as to seem divine: "Cro-Magnon had entered a separation continuum with creatures upon which his life depended and with whom he must have felt a profound bond."[39]

Eshleman then suggested that the caves might partly resolve the "unsettling innerness" of Cro-Magnon self-consciousness, the ambivalent awareness of a world above teeming with life where humans killed in order to live. By this interpretation, the cave images amounted to a "truce" with the daytime world expressed inside or below the earth in a place that was itself fearsome, awesome, "and charged with an atmosphere in which the burgeoning human subconscious may have become aware of itself."[40] Or to state this speculative narrative more cautiously: such an interpretation may be a plausible account of some of the images in some of the caves some of the time.

What does seem beyond controversy was that wildness and tameness became hybridized in hunting but also in the spiritual quests of humans understood as mediators between the world above and the world below.[41] The caves, Eshleman argued, may have been conducive to meditation[42] or even to trances that resolved conflicts outside the caves by providing the imaginative opportunity for a "momentary reestablishment of a human and animal connection" that was sensed to have been lost, or was about to be lost. The lost contact or separation from animals accounted for their being painted on the cave walls, "projections of the animality Cro-Magnon people were distancing themselves from."[43] That is, the anxiety of separation from human animalness was the comparatively inchoate experience of existence out of nothing; the parietal images, which expressed a search for meaning and order, was the response.

To reiterate, Eshleman's account was obviously speculative. If

we grant that it might be plausible, it may suggest additional changes by which the experiences of anxiety and a search for meaning might be expressed. First, once the images were painted, humans grew accustomed to being distanced from animals, which left only the meditative or spiritual specialists in place to maintain the connections. At the same time as Cro-Magnons understood how their arms and hands and minds might overcome the power of animals, they also acknowledged that animals were "older" and more "complete" than humans. They had sharper senses, were more at home in the night, and lived in places inhospitable to humans. The ambivalence continued. Moreover, when "man-about-to-be" projected his animality onto the cave walls, there was not much left of his humanity, which according to Eshleman explained why there are so few obviously human images in the caves.

A second consequence of the projection of animal images, he argued, was that Cro-Magnons achieved a distance from animals that enabled them to achieve "a perspective in which they could sight them precisely as figures of stasis, volcanic energy, eternal renewal, and beauty. . . . Animals transformed into images became sacred precincts, or temene, the boundary outlines of which sank, as it were, even deeper moats between the human community and the images' living counterparts."[44] Separation made adoration and perception possible but also provoked the apperception of a previous mythical time when animals and humans shared and participated in a mutual or consubstantial reservoir of power and community. This combination of recollection and anxiety may account for the hybrid images of therianthropes who sought to repossess and participate in animal energies—and even to direct and control them. Moreover, if we understood the animal images as signifying the place of humans in the cosmos as well as being images of animals, then they express yet another dimension of Paleolithic human experience, namely, that we are participants in cosmic rhythms regarding which we have no control and imperfect understanding. Marshack's discovery of lunar calendrics and König's understanding of the imagery of the caves as also expressing cosmic order were in this respect highly suggestive insights. As Voegelin observed, cosmological symbols were distinct from, and antecedent to, cosmological empires and their associated symbolism.

Whatever paleoscientists may make of his argument, one final

element of Eshleman's imaginative narrative was significant for political science: a sense of crisis. Historically, periods of social, economic, ecological, and political crises are often marked by responses of great spiritual creativity and insight. On this context, anthropologists have occasionally used the term "crisis cult" to account for human responses to difficulties when routine or conventional methods, secular or sacred, do not work.[45] Likewise, political science has attained its full stature "as the science of human existence in society and history" typically during "the great epochs of a revolutionary and critical nature."[46] From Thucydides and Plato to Arendt, Strauss, and Voegelin, the first-rank political scientists have reflected on crises because under such conditions the fundamental questions of political existence come into focus.

If we applied this insight to the Upper Paleolithic, we would conclude something like the following: the imagery and art constitute a mythogram, as Leroi-Gourhan said. Mythograms and the associated stories were a way of expressing a crisis of meaning and of a way of dealing with it. Marcel Otte put it rather poetically: "Paleolithic mosaics form the echo of this battle between natural chaos and the order which the spirit wishes to impose upon it. Yet, structuring this chaos establishes an 'operational distance' by which human will constructs its self-expression: more than the reflections of a system of thought, these structured images help to conceptualize the world."[47] By distancing the humans from the immediacy of drastic ecological, social, economic change and disorder, humans were able to control or at least reduce their anxieties. We quoted Voegelin in chapter 1: "Anxiety is the response to the mystery of existence out of nothing. The search for order is the response to anxiety."[48] The decorated caves and contemporary mobiliary art look to political science to be an early expression of this constant element of human consciousness.

APPENDIX

KANT'S IMPORTANCE FOR VOEGELIN'S PHILOSOPHICAL ANTHROPOLOGY

Kant's philosophical anthropology can be understood as a response to the Enlightenment rationalism that found its major incarnation in the *Encyclopedia*. It has attracted the attention of our contemporaries, notably Michel Foucault, though as a traditional philosopher Kant "systematically subordinated anthropology to metaphysics."[1] The reason for so doing is evident enough: metaphysics, for him, concerned the nature of reality; anthropology that sector of reality that was human. Anthropology therefore would necessarily be subordinate to metaphysics. "Human being is not the highest thing in the cosmos," Aristotle said.

Kant's fundamental anthropological axiom held that human beings were both members of an animal species and a species of rational beings. In this respect, Kant followed Linnaeus's *Systema naturae*, which classified all the living things he knew but provided no taxonomic description for human being. Instead, he entered the Latin version of the inscription over the entrance to the temple of Apollo at Delphi: *gnothi seauton*, "know thyself" (*nosce te ipsum* in Latin). In contrast to animals, whose faculties were sufficient for each individual to cope with life between birth and death, according to Kant human faculties were destined to develop only in the genus, not the individual, since a single lifetime was insufficient for a human to develop all the faculties that nature had bestowed on an individual human.

Kant then reflected on this construction and his own place in it and expressed his "astonishment" or "puzzlement" (*Befremden*)

at the consequences: that people live their lives only for future generations, that all generations but the last seem to be at work to enable the final generation to enjoy what their predecessors worked for, that they were, in effect, no more than the means by which the final generation entered upon as close to an earthly paradise as it is possible for humans to attain. For a moral philosopher whose central teaching, which he termed the "moral law," was to treat human beings always as an end, which is to say as an individual, and never as a means, such collectivist implications would indeed have been astonishing.[2] Kant assuaged what remained of his Christian conscience by assuming, first, the immortality of the soul as a precondition for approximating perfect virtue, and, second, by assuming an infinite historical process by which humanity was guided by providence to this same goal. Kant's position involved some insuperable difficulties, chiefly, the problem that the improvement in the condition of humanity seemed to require an already improved human being to guide the nonimproved to perfection. Where such an improved human being came from, God knows.[3]

Kant's importance for the question we raised in chapter 1 regarding species was that he put an end to the Christian creationist doctrine of fixity of species and prepared the basis for the notion of variation of organic forms. He did so initially in *The Critique of Pure Reason* (B686) where he argued in favor of "continuity of forms."[4] Kant meant by "continuity of forms" not the actual constitution of a continuous development of species in the biological world, but what he called a "regulative ideal" of reason that controlled how the human intellect dealt with an empirical and observable diversity of forms. That is, the solution to the problem that agitated (and still agitates) creationists, noncreationists, and various schools of evolutionists was understood by Kant to be, essentially, an epistemological, not a biological, problem.

As Kant put it, the "continuity of forms is a mere idea, to which no congruent object can be discovered in experience." He had two reasons for making this remark. First, "the species in nature are actually divided, and must therefore constitute a *quantum discretum*." Second, we cannot make any empirical use of the law because "it instructs us only in quite general terms that we are to seek for grades of affinity" but provides no criteria by which the constituent elements of the continuum were formed (B689). Accordingly, in any particular case, the interest of the

scientist would determine whether the emphasis was on variety, which was based on the principle of specification, or on unity, which was based on the principle of aggregations into ever larger groups or categories: "Each believes that his judgement has been arrived at through insight into the object, whereas it really rests entirely on the greater or lesser attachment to one of the two principles" (B695). In contemporary language, both "lumpers" and "splitters" have legitimacy, but when they mistake judgments regarding empirical observation for principles of reason, they stand in need of correction.

In this context, Kant corrected Herder, whose *Ideas for the Philosophy of History* (1784) classified organic forms, including humans, on the basis of their external appearance or similarity. But that similarity was a result only of the great diversity among empirical organisms. Given the huge number of species and the small differences they display in comparison with one another, that did not mean they shared a common principle of organization. On the contrary: similarity was simply the consequence of diversity.[5]

A few years later in 1790, Kant published the *Kritik der Urteilskraft*, often called the third *Critique*, having been written after the *Critique of Pure Reason* and the *Critique of Practical Reason*, usually called the *Critique of Judgement*, not more literally the *Critique of the Power of Judgement*. It consists of an analysis of the principles of judgment, in more or less commonsense terms, and took its place in Kant's philosophy or "system" between what Kant called nature and freedom. His arguments bear on the question of the status of species with respect to Darwin's account of human origins and, as is true of his critical philosophy in general, Kant's prime interest was in the concepts used by naturalists to study nature rather than in the study of nature itself. That is, for Kant there was a difference between natural *description*, whether Linnaean or Darwinian (which is essentially a pragmatic barnyard ability of a farmer to deal with nature and its "kinds," including chickens and pigs) and natural *history* (which also included origins and dispersals of biological kinds, which made such concerns philosophical rather than pragmatic).

Living things, Kant argued, were ordered to some end; they were purposive (*Zweckmässig*): "We call objects, states of mind, even actions purposive even if their possibility does not necessarily presuppose the presence of a purpose [*Zweck*]. . . . All that is necessary is that we are unable to understand their

possibility except on the assumption that they were produced according to a design. . . . Purposiveness can thus exist without a purpose" because purpose was only an assumption needed to make organisms intelligible.[6] Kant's distinction between purposiveness (*Zweckmässigkeit*) and purpose (*Zweck*) informed what Daniel Kolb called the "German tradition" of teleology. In contrast, "for the British tradition, teleology was concerned primarily with the utility of forms imposed on organisms by the Creator" and not the internal organizational principles of organisms.[7] The inability of those living within the British tradition to make or understand Kant's distinction was a reflection of an antimetaphysical tradition that had been established by Locke. The Germans would call this same more or less commonsensical approach evidence of British philosophical incompetence.

The conclusion Kant drew from the distinct organizational principles of organic material was straightforward:

> For it is quite certain that we can never adequately come to know the organized beings in their natural possibility in accordance with merely mechanical principles of nature, let alone explain them; and indeed this is so certain that we can boldly say that it would be absurd for humans even to make such an attempt or to hope that there may yet arise a Newton who could make comprehensible even the generation of a blade of grass according to natural laws that no intention has ordered; rather, we must absolutely deny this insight to human beings.[8]

A few pages later Kant again introduced the example of a blade of grass and the impossibility of understanding its generation on mechanical grounds alone.

One may summarize this important and extensively (and one hopes not obscurely) argued point as follows: organic material differs from inorganic material because of two principles. First, organisms are formed differently than inorganic artifacts. They reproduce and reproduce by species or constancy of types. Second, however, the relationship of parts to the whole is different in organisms than in mechanisms. In organisms, parts are both cause and effect; thus, nothing in an organism is devoid of purposiveness. As we noted in chapter 1, everything is interrelated, but in such a way that organisms once broken (or sick) contain the possibility of healing themselves. A broken watch needs purposive, in the sense of if-then causal, human

intervention, if it is to tell time again.

We may take it as proven, then, that it is a theoretical or philosophical error to attempt to reduce the organic to the inorganic. Mechanical causality can well account for orderly, if-then, change but cannot account for the structure of living forms. Only purposive or, in the German sense, teleological considerations, could make up for the inadequacies of mechanical explanations. This did not mean that "nature" (outside of human being) was intelligent, but it did mean that nature expressed a potential for intelligence that was actualized in human being.[9] Nor, of course, did it mean that humans were indistinguishable from nonhuman organisms, including animals.

In Kantian language, animals were not ends-in-themselves chiefly because they lacked reason or self-consciousness. Human beings were the "ultimate end of nature" only because they alone set their own purposes.[10] They did so by means of what Kant called "maxims," which in turn were evaluated by what he called the moral law. So for Kant, what provided humans with their unique capacity was their ability to act on maxims judged by the moral law derived from reason, which was innate. Holly Wilson observed: "Animal behavior exhibits prudence at most, but not true morality. What humans have in morality separates them strictly from animals. They have the possibility of a dignity that animals do not. They also have the possibility of losing dignity and orderliness in ways animals cannot."[11] Voegelin reached the same conclusion, which may be summarized as a principle: the organism is neither a mechanical artifact nor spirit, but an entirely autonomous third element that can be understood by analogy with mechanism and spirit, but can neither be reduced nor transfigured to either of them.[12]

Kant criticized Herder's *Ideas* on the grounds that he drew too close analogies between nature and history or, in the language we have been using, between the inorganic and the organic. In the *Critique of Judgement*, Kant moderated his criticism and allowed it was useful and even "commendable" to study morphological "affinity" by way of comparative anatomy. The agreement of skeletal structure and also the arrangement of other parts "by which a remarkable simplicity of basic design has been able to produce such a great variety of species by the shortening of one part and the elongation of another, by the involution of this part and the evolution of another" suggested an "analogy of forms" that despite all morphological differences "seems to have been

generated in accordance with a common primordial image [*Urbild*], strengthens the suspicion of a real kinship among them in their generation from a common primordial mother [*Urmutter*], through the gradual approach of one animal genus to the other."[13]

This "analogy of forms" extended from humans to the lowest animals to matter. It was, however, distinct from the continuity of forms Kant discussed in the *Critique of Pure Reason* insofar as analogy implies both identity *and* difference. As a consequence of analogy, there remained plenty of room for speculation and judgment about how the "maternal womb of the earth" gave rise to these various but similar creatures, how they were related to one another, and how the diversity of nature ended up where it is at present. But Kant's point was that such an account was indeed speculation that relied on the power of judgment for its persuasiveness. Such an act, therefore, involved descriptive capabilities, not the pure reason of the first *Critique*.

On the basis of the different kinds of arguments in the first and third *Critiques*, Voegelin argued that Kant had "fully developed" a "theory of the descent of species." Nineteenth-century accounts of evolution, he said, added some factual details, but as theoretical arguments they constituted "a huge step backward" because they could only assume the existence of natural forms and thus also assume that a trained scientist had the mental capacity or technique to collect and divide the diverse forms according to common characteristics. For Kant, the assumption that the categories of the naturalist reflected the realities of nature was questionable—or rather, it reflected a judgment that substance, in this instance "life," was reflected in different forms. That is, scientific naturalists *assumed* that reality would be reflected in their regular disposition of forms of life based on their observations. "The idea of a system of nature," as Larson summarized Kant's third *Critique*, in fact "did not follow from experience but constituted a presupposition [or judgment] that naturalists applied to experience and, in a sense, rediscovered there."[14] For a "working naturalist," methodological circularity was not a problem. For a philosopher it was. Obliviousness to the philosophical problem was itself a problem.

In this same paragraph 80, Kant dealt explicitly with the problem of an immanent origin of species. If such a theory of evolution were accepted, the logic of the argument led to the conclusion that the goal of the theory of evolution was to explain

the history of evolution not only of later life-forms from earlier ones but of the first life-form from inorganic matter from which the latter spontaneously originated. Kant, however, considered it "absurd" to speculate that an organized being could come into existence through "crude, unorganized matter."[15]

Organic form therefore needed to be distinguished from matter owing to its "organization." This was why Kant twice insisted that a "mechanist" account of a blade of grass was senseless reductionism. For him, the origin of "organization" required a metaphysical not a physical account. John Zammito observed, "Not only did Kant require a specific theory of generic transmission [of organic form], but he needed a theory of organic life in which to cast it."[16] The only form of generation that had been empirically observed, Christoph Girtanner, a former student of Kant, argued, was *generatio homonyma* (the persistence of species), but *generatio heteronyma* (degeneration [*Ausartung*], or transmutation of species) was not impossible, in the sense of being against reason. It was merely unheard of or against experience. "The essential point was that here both contrasted with *generatio aequivoca* (spontaneous generation)," which contradicted both experience and reason.[17]

The implications of attempting the impossible, namely, to derive organic evolution from the spontaneous generation of matter, were theoretically important. First, such a "law of evolution," if it were accepted, would mean that it was not an immanent law of biological change but a transcendent rule of reason because it delimited a law that preceded, or was antecedent to, the evolutionary series of forms of life. Species could not be explained by one another because the condition for the development of any one species could not be found in the predecessor but only in the "law" standing outside the series of species. That is, Kant's argument showed that the theory of evolution simply shifted the real origin of species back to the origin of evolution, which "destroys it as meaningless as far as its explanatory purpose is concerned."[18]

Voegelin recapitulated Kant's argument as follows:

> The kinship relationships of the living world are primary phenomena just as the life of the species and the life of the individual organism are primary phenomena, which one can see or not, but there is nothing about them that needs to be explained. The primary phenomenon of life becomes visible in a

> threefold way: in the living individual, in the species, and in the interconnectedness of the entire living world. It is impossible to use a part of this phenomenon to explain the same phenomenon in another of its manifestations. The life of the individual cannot be explained through the life of the species, as the theory of series [of Herder] has attempted to do; the life of the species cannot be explained by the totality of the phenomenon of life, as the theory of evolution attempts to do; and the totality of the phenomenon of life can most definitely not be explained through the laws of non-living nature. In the substantially genuine movement of the spirit, the theory of evolution has come to an end in the *Critique of Judgement*—although in the history of derivative theories on this issue, theories that move ever farther away from the center of the spirit, [namely] evolutionary theory, did not flourish until the following century.[19]

Once the distinction of living body and matter was secure, and that "life" was understood as a "primordial phenomenon," then it was possible to distinguish "the human form in the fullness of its bodily-spiritual [*leiblich-geistig*] totality" from mere biological "life."[20] In other words, granting an element of animality in human nature, human dignity lay elsewhere, precisely in the human ability to free itself from natural ends, such as self-preservation, in order to submit (in Kantian terms) to the moral law. Or as Roger Scruton put it: according to evolutionary theory, "we think and feel in ways that promote the goal of reproduction. But our mental states have no such goal. We pursue the true, the good and the beautiful, even though the false, the nasty, and the messy might have been just as useful to our genes."[21]

This conclusion did not mean that it was impossible to agree with the evolutionary notion that humans evolved from animals, only that human behavior could not be based on, or reduced to, animal behavior. The argument here is akin to the previous one, that mechanistic, external forms did not contradict Kantian teleological ones because the former revealed necessary natural laws, whereas the latter revealed nature in terms of its purposiveness in organisms. Even biology is based on a metaphysical principle, such as "nature does nothing in vain," which encourages researchers to keep looking until they find a purpose for an organ or a gene. This is why even modern medical science judges that the purpose of the eye is to see; if it is in need of treatment, it is to restore its purposiveness. Such a teleological

judgment for Kant was a priori rather than empirical because it presupposed that there were purposes for natural beings and their constituent parts, and those purposes were normative in such a way that they enabled—for instance—a doctor to evaluate the condition of the part (an eye, for example) to see if it were in need of treatment. The judgment, obviously, relied on experience but could not be made on the grounds of experience alone. To reiterate: Kant's conclusion was not that there was nothing mechanical about organisms or nothing animal about humans but that, in addition, organisms were purposive and humans were subject (to retain the Kantian formula) to the moral law, which of course they could also ignore because they were free in ways that animals were not.

Voegelin's reliance on Kant led him to conclude that the "signs" of the phenomenon of life (the living individual), the order that retained a constant form (species), and the historical unfolding of the living substance in the context of related or analogical forms could not explain one another because they were connected or (to use his later language) because they constituted a "complex." That is, the individual form could not be "explained" by the species and the species could not be "explained" by the evolution of the form; "morphologically and historically, life as a whole is a primordial phenomenon."[22] Voegelin argued that contemporary biological theory was oblivious of the problem of substance or of the beginning of species because biologists were evidently unaware of Kant's analysis in the third *Critique*. Fidelity to Darwin's theory of evolution or any other similar construct amounted to an effort to obscure the primordial vision and image of life: "We do not need a theory to tell us that organisms can be divided into orders with constant forms and that these orders are in turn morphologically related to each other—we can clearly see that much."[23] In Kantian terms, morphological relations were a matter of judgment, not pure reason or "theory." Likewise, geology and the study of fossils showed us the historical sequence of forms; again no theory or philosophy of reason was needed to account for the observation of phenomena, which relied on judgment.

Constructing a "theory" to account for what could be seen without one, namely, the external circumstances within which one form changed into another, invariably resulted in explanatory accounts that reduced the phenomenon of life, with its complex structure, to a "law of inorganic nature—or, to put it

ontologically: they deny the reality of life and see only inanimate matter as the one primordial phenomenon that has to explain all other phenomena."[24] That evolution took one path or another through mutation (or not) was, once again, apparent only because we could observe the results. Accordingly, the laws of heredity did not provide us with a theory of living forms but with rules of their material constitution in individuals. The modification of forms, which is to say, the formation of new species, was just as apparent as the invariance of form within a species. Both expressed the historical unfolding of living substance so that individuals have to be understood as living entities and not a collection of hereditary factors; these latter simply expressed the material constitution of the individual.

To summarize Voegelin's point: if human being were considered the last item on an evolutionary chain, then human being could be reduced to matter and eventually to whatever subatomic particles one fancies. But such an account did not deal with the beginning of human being. It did, however, raise the interesting twofold philosophical question: (1) Where did the subatomic particles come from?; and (2) What was the matrix of matter that contains the potentiality of life and indeed of human life? These were, however, obviously not biological questions.[25] When Voegelin wrote *The History of the Race Idea*, in 1933, he was less concerned with theoretical mistakes of biologists than the practical disasters that resulted when human beings acted on them.[26] And yet the theoretical mistakes were (and remain) there.

Finally, let us then consider Voegelin's argument regarding the "huge step backward" from Kant that was taken by Darwin. There were two elements to this problem: (1) the nature of Darwin's philosophical backwardness, and (2), notwithstanding fundamental flaws, the reason for the popular success of "Darwinism" or "evolutionism."

In an essay published in 1948, Voegelin described the problem as "scientism."[27] The essential feature of scientism was that those who participated in this intellectual movement were concerned entirely with the sciences of phenomena (the sciences of appearances, "accidents"). In contrast to accidents or appearances, there were the nonphenomenal realities conventionally called "essences" or "substances." Substantive realities were apprehended in meditative spiritual experiences rather than in perceptual experiences and were symbolized, again

by convention, in the language of revelation and metaphysics. Kant's "moral law" constituted an example of a philosophical evocation of substance regarding human existence. Scientism, Voegelin argued, was "the attempt to treat substance (including man in society and history) as if it were phenomenon."[28]

Around the same time, Voegelin wrote a chapter for his *History of Political Ideas* titled "Phenomenalism."[29] Reality, according to phenomenalists, was what appears, so that what did not appear was not real. To guard against the difficulty that what did appear may not appear the same way to everybody, phenomenalism rested on an epistemology that looked to appearances and, more narrowly, it relied on a method, namely, mathematics, that ensured that what appeared did, in principle at least, look the same to everybody. During the nineteenth century, phenomenalist arguments were often criticized by Christians as "materialism" insofar as religiously inclined polemicists saw their chief opponents as individuals devoted to the science of material phenomena, namely, physics. However, the distinction between material phenomena and the substance, namely matter, for which material phenomena were substituted within the science of physics, was overlooked by both sides. A genuine materialism (and here Voegelin cited Lucretius, Paul Valéry, and George Santayana), which understood matter as the substance of reality, necessarily entailed a metaphysical argument. Accordingly it was much more subtle (and more interesting) than was found in the defense of "materialist" phenomenalist notions. The success of the theory of evolution, Voegelin said, was "a source of bewilderment to the historian of ideas." Creational theory regarding species was replaced by the notion of a chronological succession of living forms from primitive to complex, and this change was accompanied by an increase in phenomenal knowledge of the process. In addition, "the insight was also gained that the idea of an evolution of living forms did not bring us one step nearer to an understanding of the mystery of the substance that was evolving through the chain of forms."[30] Indeed, the chain of evolutionary forms was as much an ultimate ontological datum as the single species had previously been. Nor could anything be done to clarify the mystery of being by speculation on the origin of organic forms in inorganic matter. The ontological problem as articulated by Leibniz and then by Schelling remained: Why was there something rather than nothing? And why was something the way it was and not some other way? That is, the interesting

metaphysical question, so far as biological evolution was concerned, was this: What is the significance and justification of the chain of evolutionary forms?

In the nineteenth century, Darwin's theory of evolution ignored the issue of phenomenal and substantive knowledge. Part of the reason was a result of Darwin's greatness as an empirical naturalist. He had mastered his field of science, no doubt, but his specialization was purchased at the cost of an inability to see problems of metaphysics or theology. Voegelin wrote in 1933, "Today's biological and anthropological theory is characterized by complete ignorance of the classical state of the problem," which had been maximally clarified by Kant.

> The problem of species and evolution is discussed on the basis of Darwinian theory and the post-Darwinian development of science, which faces the speculative problems of the law of substance, the sequence of species and its beginning, the descent of species, and the beginning of organic evolution without a clue. In fact, almost a century and a half after the *Critique of Judgement*, there is an island where this work is unknown; where people have never racked their brains over the problems presented in that volume, and where people actually believe that the theory of evolution is a highly satisfactory explanation for something or other and that through diligent study of genetic laws one will not only learn the rules for the constancy of characteristics but also gain some insight into the phenomenon of life.[31]

As to the separate problem of the success of Darwinism as an intellectual movement, the answer was to be found in the appeal of these "inadequate, badly thought-out dogmas" to "the emotions of the liberal era." The dogmas were (1) personal variation distinguished all organic individuals from their parents; (2) outside pressures ensured that only the best-adapted survive and reproduce; and (3) individually acquired traits of survivors were passed on to their descendants. "Thus the readings of the three problems of variation, selection, and heredity are established." The appeals to corresponding liberal emotions were (1) the everyday experience that children resembled their parents but were not entirely like them; (2) from Malthus, Darwin borrowed the notion that food or other external shortages led to a struggle so that only the fittest survived, a notion of liberal harmony that "reproduces and maintains itself by eliminating what is unfit and retaining what is fit and useful"; (3) the

transmission of what had been acquired and preserved was passed on to descendants was also, like the significance of family and of competition, a "basic liberal demand."[32]

Each of these theses, whatever their popular appeal, and even though Darwin saw them as solutions to problems he inherited, were nevertheless still problems. First, variation in individuation was irrelevant to the problem of species. Second, selection of useful traits through environmental pressures was not irrelevant "but it is not decisive," because the premise that organisms were adapted to their environment was not correct. Rather, an organism must be sufficiently adapted, which meant that speciation traits were relatively indifferent to species' survival. Likewise, the third thesis on heredity does not (and ignoring the intramural issue of Lamarck and modern genetics) and did not accomplish what it was intended to accomplish because individual adaptive traits were not preserved and passed on like property.[33] To summarize this excursus into the problems raised by Kantian philosophy and the problems avoided by the antiphilosophical dogmas of scientism: the mystery of existence remained even if it were ignored by those whom paleontologist Stephen Jay Gould called Darwinian Fundamentalists.[34]

NOTES

Preface

1. Klaus Vondung, "Rereading Eric Voegelin's *Order and History*," *International Journal of the Classical Tradition* 11 (2004): 85. See also his remarks in Vondung, *Voegelin Recollected: Conversations on a Life*, ed. Barry Cooper and Jodi Bruhn (Columbia: University of Missouri Press, 2008), 17–18.

2. Thomas A. Hollweck, "Rereading Eric Voegelin's *Order and History*," in *Voegelin Recollected*, 20.

3. For details see Barry Cooper, *Consciousness and Politics: From Analysis to Meditation in the Late Work of Eric Voegelin* (Notre Dame, IN: St. Augustine's Press, 2018).

4. Bruce Dickson, *The Dawn of Belief: Religion in the Upper Paleolithic of Southwestern Europe* (Tucson: University of Arizona Press, 1990), 95.

5. Eric Voegelin, *The Ecumenic Age*, Vol. 4 of *Order and History*, ed. Michael Franz (Columbia: University of Missouri Press, 2000), in *The Collected Works of Eric Voegelin* 17:52–53 (hereafter cited as *CWEV* by volume and page).

6. Robert N. Bellah, *Religion in Human Evolution: From the Paleolithic to the Axial Age* (Cambridge, MA: Belknap Press of Harvard University Press, 2011), 228.

7. Alfred Schutz, "Multiple Realities," in *Collected Papers*, Vol. 1, *The Problem of Social Reality* (The Hague: Martinus Nijhoff, 1967), 207–59. Voegelin and Schutz were close friends.

8. Colin Renfrew, *Prehistory: The Makings of the Human Mind* (London: Phoenix, 2008), vii.

9. James L. Pearson, *Shamanism and the Ancient World: A Cognitive Approach to Archaeology* (Lanham, MD: Altamira Press, 2002), 76.

10. Bar-Yosef was quoted in Beebe Bahrami, *Café Neandertal* (Berkeley, CA: Counterpoint, 2017), 79.

11. Ian Morris, *Foragers, Farmers, and Fossil Fuels: How Human Values Evolve* (Princeton, NJ: Princeton University Press, 2015), 243.

12. "Where do we come from? What are we? Where are we going?" There is no punctuation in the original.

13. Bellah, *Religion in Human Evolution*, 33.

14. Clifford Geertz, *Life among the Anthros*, ed. Fred Ingles (Princeton, NJ: Princeton University Press, 2010), 90–91.

15. But consider Geneviève von Petzinger, *The First Signs: Unlocking the Mysteries of the World's Oldest Symbols* (New York: Atria Books, 2016).

16. B. Delluc and G. Delluc, *Dictionnaire de Lascaux* (Bordeaux: Éditions du Sud-Ouest, 2008), 184.

17. Quoted in Craig Childs, *Finders Keepers: A Tale of Archaeological Plunder and Obsession* (New York: Little, Brown and Company, 2013), 69.

Chapter 1

1. The notion of hunter-gatherer societies is widespread but is also distinctively modern. It was evidently developed by Scottish commentators on Montesquieu during the Scottish Enlightenment. It clearly refers to what may be called an economic or technological approach to provisioning and, despite its widespread use in contemporary social science, says little about the symbolic questions that are central to this book. For details of the genesis of the term, see Alan Bernard, "Hunting-and-Gathering Society: An Eighteenth-Century Scottish Invention," in *Hunter-Gatherers in History, Archaeology and Anthropology*, ed. Alan Bernard (Oxford: Berg, 2004), 31–43.

2. See Barry Cooper, *Eric Voegelin and the Foundations of Modern Political Science* (Columbia: University of Missouri Press, 1999), chap. 5. Kant might have found this terminology paradoxical because, as Brian Jacobs and Patrick Kain pointed out, he considered philosophy to be entirely rational and nonempirical, and anthropology to be nothing but empirical. See Jacobs and Kain, introduction to *Essays on Kant's Anthropology* (Cambridge: Cambridge University Press, 2003), 3.

3. Brendan Purcell, *From Big Bang to Big Mystery: Human Origins in the Light of Creation and Evolution* (Dublin: Veritas, 2011), 26.

4. Eric Voegelin, *The Drama of Humanity and Other Miscellaneous Papers, 1939–1985*, ed. William Petropulos and Gilbert Weiss (Columbia: University of Missouri Press, 2004), *CWEV* 33:175–242.

5. Brendan Purcell, *The Drama of Humanity: Towards a Philosophy of Humanity in History* (Frankfurt: Peter Lang, 1996), 28.

6. See her essay on Isak Dinesen in Hannah Arendt, *Men in Dark Times* (New York: Harcourt Brace and Company, 1968); see also Charles R. Embry, *The Philosopher and the Storyteller: Eric Voegelin and Twentieth-Century Literature* (Columbia: University of Missouri Press, 2008); J. Edward Chamberlin, *If This Is Your Land, Where Are Your Stories? Finding Common Ground* (Toronto: Vintage, 2004).

7. Alan Barnard, *Language in Prehistory* (Cambridge: Cambridge University Press, 2016), 107.

8. M. H. Wolpoff, "Discussion," in *Paleoanthropology, Morphology and Paleoecology*, ed. R. H. Tuttle (The Hague: Mouton, 1975), 15.

9. Starting in the 1980s some archaeologists have raised objections to the use of the term "art" to describe Upper Paleolithic images and artifacts. Margaret W. Conkey, for example, preferred the term "visual and material imagery." Marie König wrote of documentation. Since no term seemed to have triumphed and "art" is still widely used, we will use it. One obvious reason is that the Upper Paleolithic image-makers had to

deal with and solve many of the same problems faced by contemporary artists in projecting a three-dimensional image onto a more or less flat surface. I say more or less flat because the Upper Paleolithic artists also took advantage of the cave contours to enhance the effect of the imagery. Indeed, some images can be seen only if the viewer moves, for example, around a corner or into an adjoining passage. This attribute of parietal art was noticed early in the history of interpretation of the decorated caves. See Georges-Henri Luquet, *L'Art et la Religion des Hommes fossiles* (Paris: Masson, 1926). Indeed, cave contours led some interpreters to argue that the artists "saw" the images in the rock surface before enhancing what was already there by adding pigment to the rock. More specifically, Upper Paleolithic artists "discovered outline, contour line, cross-contour line, parallel hatching, cross-hatching, cameo and intaglio marking, modeling, carving in relief and in the round, champlevé carving, smudging, shading, overlapping, stenciling, foreshortening, use of friezes and use of plane and void perspective"; Barbara Oling Alpert, *The Creative Ice Age Brain: Cave Art in the Light of Neuroscience* (Santa Fe, NM: Foundation 20/21, 2008), 2. They all made forays into what we would call pointillism, cubism, and surrealism. Moreover, all these techniques were lost during the Neolithic; some were recovered in classical Greece then lost again until the Renaissance. Even so, the term "art" has a much more extensive meaning than any Romantic or post-Enlightenment sense. See Conkey, "New Approaches in the Search for Meaning? A Review of Research in 'Paleolithic Art,'" *Journal of Field Archaeology* 14 (1987): 413–30; Conkey, "Materiality and Meaning-Making in the Understanding of the Paleolithic 'Arts,'" in *Becoming Human: Innovation in Prehistoric Material and Spiritual Culture*, ed. Colin Renfrew and Iain Morley (Cambridge: Cambridge University Press, 2009), 123–34; R. White, "Beyond Art: Toward an Understanding of the Origins of Material Representation in Europe," *Annual Review of Anthropology* 21 (1992): 537–64; Paul G. Bahn, *The Cambridge Illustrated History of Prehistoric Art* (Cambridge: Cambridge University Press, 1998), xi–xxxi.

10. Matt Cartmill, *A View to a Death in the Morning: Hunting and Nature through History* (Cambridge: Cambridge University Press, 1993), xi.

11. Instead of *Man the Hunter*, ed. I. Devore and R. B. Lee (Piscataway: Transaction, 1969), the current story concerns D. L. Hart and R. W. Sussman, *Man the Hunted: Primates, Predators, and Human Evolution* (New York: Basic Books, 2005). See also Agustin Fuentes, *The Creative Spark: How Imagination Made Humans Exceptional* (New York: Dutton, 2017), 51–52.

12. Ian Hodder made a plea in 1989 to reintroduce narrative and storyline along with dialogue and discussion regarding the actual excavation. He was criticizing the development of archaeological writing over the previous two centuries toward impersonal, abstract, and unscientific (because it obscured real interpretive uncertainties)

accounts; see Hodder, "Writing Archaeology: Site Reports in Context," *Antiquity* 63 (1989): 268–74. A decade later, James Deetz provided a splendid example of what archaeological writing had become: instead of saying "people used rocks," we read of "lithic utilization by anatomically modern hominin populations"; see Deetz, "Archaeologists as Storytellers," *Historical Archaeology* 32 (1998): 94. Similar remarks, of course, might be made of current writing in political science journals.

13. Misia Landau, *Narratives of Human Evolution* (New Haven, CT: Yale University Press, 1991), 5. Narrative is equally central to ape evolution, and presumably also to cat or parrot evolution. See also Roger Lewin, *Bones of Contention: Controversies in the Search for Human Origins* (New York: Simon and Schuster, 1987); G. A. Clark, "Paradigms in Science and Archaeology," *Journal of Archaeological Research* 1 (1993): 203–34.

14. Eric Voegelin, *Israel and Revelation*, Vol. 1 of *Order and History*, ed. Maurice P. Hogan (Columbia: University of Missouri Press, 2001), *CWEV* 14:40.

15. Eric Voegelin, "Anxiety and Reason," in *What Is History? And Other Late Unpublished Writings*, ed. Thomas A. Hollweck and Paul Caringella (Baton Rouge: Louisiana State University Press, 1990), *CWEV* 28:71.

16. Rosemary A. Joyce, *The Language of Archaeology: Dialogue, Narrative and Writing* (Oxford: Blackwell, 2002), 1–2.

17. Landau, *Narratives of Human Evolution*, 13.

18. See Barry Cooper, "Neanderthal Politics," in *The Human Voyage of Self-Discovery: Essays in Honour of Brendan Purcell*, ed. Brian Leahy and David Walsh (Dublin: Veritas, 2013), 44–69.

19. The biological criteria are self-evident. The morphological criteria depend on informed judgment. But even so, Erik Trinkaus, who has probably done more to establish distinct Neanderthal metrics than any other archaeologist, said that he thought that Neanderthals and Sapiens would not have seemed much different to one another; see Trinkaus, "Modern Human versus Neanderthal Evolutionary Distinctiveness," *Current Anthropology* 47, no. 4 (2006): 597–608. See also Fredrick Turner, *In the Land of Temple Caves: From St. Emillion to Paris's St. Sulpice* (New York: Counterpoint, 2004), 127.

20. Steven E. Churchill, "Comments" [on Trinkaus], *Current Anthropology* 47, no. 4 (2006): 609.

21. Maciej Henneberg, "Comments" [on Trinkaus], in ibid., 610.

22. Marjorie Grene and David Depew, *The Philosophy of Biology: An Episodic History* (Cambridge: Cambridge University Press, 2004), 212. Richard Dawkins, a contemporary Darwinian, restated the problem as reflecting the conventional status of species; see Dawkins, *The Greatest Show on Earth: The Evidence for Evolution* (New York: Free Press, 2004), 195–96, 203.

23. Details of Kant's argument, its connection to Darwinism, and its importance for Voegelin's philosophical anthropology are presented in

the appendix to this book.

24. On occasion Voegelin drew attention to such oddities: La Mettrie was considered a respectable scientist for arguing that "man" was a machine. He did not say "I am a machine," which would have turned him into a psychiatric case. See Voegelin, "The Eclipse of Reality," in *What Is History?*, 160–62.

25. Grene and Depew, *The Philosophy of Biology*, 92–94.

26. Henneberg, "Comment," 610–11.

27. According to the contemporary paleoanthropologist João Zilhão, "at any given time, there was and only ever has been one species of *Homo* on earth"; quoted in Beebe Bahrami, *Café Neandertal: Excavating Our Past in One of Europe's Most Ancient Places* (Berkeley, CA: Counterpoint, 2017), 12–13.

28. In *The World of the Polis*, for example, Voegelin argued that "the movement of a soul toward the truth does not abolish the demonic reality from which it moves away. The order of the soul is nothing on which one can sit down and be happy ever after"; see Eric Voegelin, *The World of the Polis*, Vol. 2 of *Order and History*, ed. Athanasios Moulakis (Columbia: University of Missouri Press, 2000), *CWEV* 15:329; or his remarks in Voegelin, *The New Science of Politics*, in *Modernity without Restraint: The Political Religions; The New Science of Politics; Science Politics and Gnosticism*, ed. Manfred Henningsen (Columbia: University of Missouri Press, 2000), *CWEV* 5:231–33.

29. Ian Tattersall, *The Monkey in the Mirror: Essays on the Science of What Makes Us Human* (New York: Harcourt, 2002), 138–39.

30. Ian Tattersall and Jeffrey H. Schwartz, *Extinct Humans* (Boulder, CO: Westview, 2000), 210. See also Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction* (London: Routledge and Kegan Paul, 1983), 114.

31. Wiktor Stoczkowski is a Polish scholar living in Paris. The French version of his argument was published as *Anthropologie naïve, Anthropologie savante* (Paris: CNRS, 1994). We refer to the translation by Mary Turton, *Explaining Human Origins: Myth, Imagination, and Conjecture* (Cambridge: Cambridge University Press, 2002).

32. Turton, *Explaining Human Origins*, 49.

33. Ibid., 65–66. Political scientists might be reminded of some interpretations of the differing opinions or stories of Hobbes and Rousseau concerning the "state of nature." In Kantian terms these "causes" are only analogical, not mechanical.

34. Ibid., 71–72.

35. Ibid., 72.

36. Ibid., 186.

37. Stoczkowski did not draw a distinction between anthropogenesis, which we take to be a philosophical symbol based on myth and intended to express a meaning, and hominization, which we take to be a paleoscientific concept based on archaeology that was meaningful only when placed in a larger narrative context. As we argue below in this

chapter, Voegelin, Lonergan, and Jonas, for example, were concerned not with the causes of hominization but with "emergent conditions" (Lonergan's term) for anthropogenesis. In this context, Gould and Vrba's notion of "exaptation," where an initially random genetic mutation later became adaptive and useful, pointed to the same problem from the perspective of biology by attempting to "loosen up" the strict sequence of the dominant paleoscientific account of hominization. See Stephen J. Gould and Elisabeth S. Vrba, "Exaptation: A Missing Term in the Science of Form," *Paleobiology* 8 (1982): 4–15. We discuss exaptation in more detail in subsequent chapters.

38. Turton, *Explaining Human Origins*, 129, 134, 155.

39. Ibid., 171–72, 178.

40. Ibid., 189.

41. Ibid.

42. Ibid., 190–93.

43. See Tilo Schabert, "At the Start," in *The Second Birth: On the Political Beginnings of Human Existence*, trans. Javier Ibáñez-Noé (Chicago: University of Chicago Press, 2015), 5–8.

44. Lydia V. Pyne and Stephen J. Pyne, *The Last Lost World: Ice Ages, Human Origins and the Invention of the Pleistocene* (New York: Penguin, 2012).

45. Ibid., 3, 36–37.

46. Ibid., 50, 54.

47. Francesco Berna et al., "Microscopic Microstratagraphic Evidence of *in situ* Fire in the Acheulean Strata of Wonderwerk Cave, Northern Cape Province, South Africa," *Proceedings of the National Academy of Sciences USA* [*PNAS*] 109 (2012): 7593–94, found secure evidence of control of fire dating from 1 MYA. Even earlier datings are apparently less reliable.

48. Pyne and Pyne, *The Last Lost World*, 98.

49. All emphasis in this book in quoted material is in the original, unless otherwise noted.

50. Gregory J. Wightman, *The Origins of Religion in the Paleolithic* (Lanham, MD: Rowman and Littlefield, 2015), 156.

51. See also Richard Wrangham, *Catching Fire: How Cooking Made Us Human* (New York: Basic Books, 2009).

52. Pyne and Pyne, *The Last Lost World*, 10.

53. Ibid., 165, 170, 226.

54. Ibid., 173. The Pynes prefer to use the lowercase substantive adjective "sapients" rather than the noun or adjectival noun "Sapiens." Where we quote their text directly, we follow their usage.

55. Ibid., 177.

56. Ibid., 37.

57. Ibid., 178.

58. Erik Trinkaus, "Early Modern Humans," *Annual Review of Anthropology* 34 (2005): 207–30; Trinkaus, "European Early Modern Humans and the Fate of the Neandertals," *PNAS* 104 (2007): 7367–72;

Trinkaus, “Late Pleistocene Adult Morality Patterns and Modern Human Establishment,” *PNAS* 108 (2011): 1267–71. The details of the Sapiens migration east into Asia have changed enormously over the past few years. The events of the European migration of Sapiens have also changed a good deal, but the chronology seems to be more or less agreed upon.

59. Pyne and Pyne, *The Last Lost World*, 196.

60. Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000), 373. See also his arguments in Ingold, “An Anthropologist Looks at Biology,” *Man*, n.s., 25 (1990): 208–29; and Ingold, “Becoming Persons: Consciousness and Sociality in Human Evolution,” *Cultural Dynamics* 4 (1991): 355–78; Ingold, “Beyond Biology and Culture: The Meaning of Evolution in a Relational World,” *Social Anthropology* 12 (2004): 209–21; Ingold, “Prospect,” in *Biosocial Becoming: Integrating Social and Biological Anthropology*, ed. Tim Ingold and Gisli Palsson (Cambridge: Cambridge University Press, 2013), 1–21.

61. Ingold, *The Perception of the Environment*, 377.

62. Ibid., 379.

63. Ibid., 385.

64. Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1962), 49ff.

65. Ingold, *The Perception of the Environment*, 387.

66. Ibid., 388.

67. Ibid., 388–89.

68. Ibid., 390–92.

69. Bahrani, *Café Neandertal*, 12–13. See also Dawkins, *The Greatest Show on Earth*, 195–96.

70. Whitney Davis, “The Origins of Image-Making,” *Current Anthropology* 27 (1986): 199, 210.

71. Tim Ingold, *Evolution and Social Life* (Cambridge: Cambridge University Press, 1986), xiii, 342–45.

72. Clifford Geertz, *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), 47–49. With rather more philosophical acumen, Grene and Depew come to the same conclusion; see Grene and Depew, *The Philosophy of Biology*, 333–42.

73. Hans Jonas, “Philosophy at the End of the Century: A Survey of Its Past and Future,” *Social Research* 61, no. 4 (1994): 813.

74. Ingold, *The Perception of the Environment*, 388–89.

75. Hans Jonas, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (Chicago: University of Chicago Press, 1984), 205. We encountered this skeleton earlier in the form of Monsieur La Mettrie, the man-machine.

76. Bernard J. F. Lonergan, *Insight: A Study of Human Understanding* (New York: Philosophical Library, 1957), 121–24, 132–34.

77. Ibid., 119.

78. Ibid., 256. Ingold’s arguments can be understood as

phenomenalist reflections on the problem of emergence that were undertaken (so far as I know) without reference to Lonergan's (or any other philosopher's) metaphysics. In a similar context, Roger Scruton discussed consciousness as "emergent" from complex animal life; see Scruton, *The Soul of the World* (Princeton, NJ: Princeton University Press, 2014), 62. However, as David J. Levy noted, within the ontology of human existence "'emergence' is a notoriously vague term," however necessary (or at least widespread) it seems to be; Levy, "The Limits of History: Ontology, Anthropology and Historical Understanding," *Journal of the British Society for Phenomenology* 20 (1989): 158–59.

79. Jonathan Marks, *What It Means to be 98% Chimpanzee: Apes, People, and Their Genes* (Berkeley: University of California Press, 2002), 42. See also David R. Begun, *The Real Planet of the Apes: A New Story of Human Origins* (Princeton, NJ: Princeton University Press, 2016), 15–16.

80. Marks, *What It Means to be 98% Chimpanzee*, 22, 24.

81. Ibid., 176.

82. Max Scheler, *Die Stellung des Menschen im Kosmos* (Bonn: Bouvier, 2007); footnotes are to the (sometimes modified) translation, *Man's Place in Nature*, trans. Hans Meyerhoff (Boston: Beacon, 1961).

83. David J. Levy, *Hans Jonas: The Integrity of Thinking* (Columbia: University of Missouri Press, 2002), 17.

84. Scheler, *Man's Place in Nature*, 5–7.

85. Ibid.

86. For details, see R. B. Onians, *The Origins of European Thought about the Body, the Mind, the Soul, the World, Time, and Fate* (Cambridge: Cambridge University Press, 1989), pt. 2, chap. 1, 93–122.

87. Scheler, *Man's Place in Nature*, 36.

88. Ibid., 37.

89. Ibid., 40–41.

90. Ibid., 54.

91. Ibid.

92. Ibid., 74, 78.

93. Hans Jonas, *The Phenomenon of Life: Toward a Philosophical Biology* (Chicago: University of Chicago Press, 1982), 4–5, 81–86, 99–103.

94. Scruton, *The Soul of the World*, 62, 177–79.

95. Jonas, *The Phenomenon of Life*, 3–4. Many of Jonas's reflections were informed by the classic study of Kurt Goldstein, *Der Aufbau des Organismus* (1934).

96. Jonas, *The Phenomenon of Life*, 79.

97. Ibid., 82–84.

98. Jonas, *The Imperative of Responsibility*, 81.

99. Jonas, *The Phenomenon of Life*, 4–5.

100. Ibid., 85–86. See also Noa Vaisman, "Shedding Our Selves: Perspectivism, the Bounded Subject and the Nature-Culture Divide," in Ingold and Palsson, ed., *Biosocial Becoming*, 106–22.

101. Jonas, *The Phenomenon of Life*, 99–103.

102. Ibid., 106.

103. Hans Jonas, *Philosophical Essays: From Ancient Creed to Technological Man* (Englewood Cliffs, NJ: Prentice-Hall, 1974), 251–52. This is one reason why those who consider Neanderthals and Sapiens to be equally but differently human stress that Neanderthal burial sites are tombs. Those who consider Neanderthals not to be fully human argue their burial sites served another purpose, such as hygiene or neatness.

104. For recent accounts of Neanderthal art, see Dirk L. Hoffmann et al., "Symbolic Use of Marine Shells and Mineral Pigments by Iberian Neandertals 115,000 Years Ago," *Science Advances* 4, no. 2 (2018), doi:10.1126/sciadv.aar.5255; D. L. Hoffman et al., "U-Th Dating of Carbonate Crusts Reveals Neandertal Origin of Iberian Cave Art," *Science*, 359 (2018): 912–15; J. Zilhão, "Neanderthals Thought Like We Do," *Max-Planck-Gesellschaft*, https://www.mpg.de/11948095/neandertals-cave-art. Kate Wong, "Ancient Cave Paintings Clinch Case for Neandertal Symbolism," *Scientific American*, February 23, 2018, https://www.scientificamerican.com/article/ancient-cave-paintings-clinch-case-for-neandertal-symbolism/?print=true.

105. Jonas, *Phenomenon of Life*, 159–65.

106. Hannah Arendt, *On Violence* (New York: Harcourt, Brace and World, 1970), 60.

107. Thomas Wynn and Frederick L. Coolidge, *How to Think Like a Neanderthal* (Oxford: Oxford University Press, 2012), chap. 5.

108. Jonas, *The Phenomenon of Life*, 172.

109. Ibid., 175.

110. Ibid., 181.

111. Ibid., 185.

112. Ibid., 57.

113. Jonas, "Philosophy at the End of the Century," 814–16; see also Scruton, *The Soul of the World*, 7.

114. Jonas, *The Phenomenon of Life*, 38.

115. Jonas, *Philosophical Essays*, 70.

116. See also Barry Cooper, *Action into Nature: An Essay on the Meaning of Technology* (Notre Dame, IN: University of Notre Dame Press, 1991).

117. Jonas, *Philosophical Essays*, 252–53.

118. Eric Voegelin, "In Search of the Ground," in *Published Essays, 1953–1965* (Columbia: University of Missouri Press, 2000), *CWEV* 11:229.

119. See, for example, Voegelin, "Reason: The Classic Experience," in *Published Essays, 1966–1985* (Baton Rouge: Louisiana State University Press, 1990), *CWEV* 12:265–91.

120. Voegelin, "In Search of the Ground," 229–30.

121. Ibid., 232.

122. Eric Voegelin et al., "Prospects for Western Civilization," in *Published Essays, 1953–1965*, 125–26.

123. Eric Voegelin, *Race and State*, trans. Ruth Hein (Baton Rouge: Louisiana State University Press, 1997), *CWEV* 2:25–26.

124. Ibid., 64–65.
125. Ibid., 69–70.
126. Ibid., 34.
127. Ibid., 37.
128. Ibid., 62.
129. Ibid., 117.
130. Ibid., 172.
131. On this specific question, see Voegelin, "The Growth of the Race Idea," in *Published Essays, 1940–1952*, ed. Ellis Sandoz (Columbia: University of Missouri Press, 2000), *CWEV* 10:27–61.
132. Voegelin, *Race and State*, 173.
133. I have discussed this text at greater length in Cooper, *Consciousness and Politics*, chap. 3. The quotations given in parenthesis in the text are from Voegelin, *Israel and Revelation*.
134. See Paul Grimley Kuntz, "Voegelin's Experiences of Disorder Out of Order and Vision of Order Out of Disorder: A Philosophic Meditation on His Theory of Order-Disorder," in *Eric Voegelin's Significance for the Modern Mind*, ed. Ellis Sandoz (Baton Rouge: Louisiana State University Press, 1991), 111–73. See also Jürgen Gebhardt, epilogue to *In Search of Order*, Vol. 5 of *Order and History* (Columbia: University of Missouri Press, 2000), *CWEV* 18:125–28.
135. Eric Voegelin, *Autobiographical Reflections, Revised Edition, With a Voegelin Glossary and a Cumulative Index*, ed. Ellis Sandoz (Columbia: University of Missouri Press, 2006), *CWEV* 34:101.
136. Bernhard W. Anderson, "Politics and the Transcendent: Voegelin's Philosophical and Theological Exposition of the Old Testament in the Context of the Ancient Near East," in *Voegelin's Israel and Revelation: An Interdisciplinary Debate and Anthology*, ed. William M. Thompson and David L. Morse (Milwaukee: Marquette University Press, 2000), 20.
137. See Henri Frankfort et al., *Before Philosophy: The Intellectual Adventure of Ancient Man: An Essay on Speculative Thought in the Ancient Near East* (Baltimore: Penguin, 1946), 71–78.
138. Voegelin, *The Drama of Humanity*, 187.
139. William M. Thompson, "Voegelin's *Israel and Revelation*: The Reception and Challenge in America," in *Occasional Papers* 27 (Munich: Eric-Voegelin-Archiv, 2001), 7–9.
140. Or, as Voegelin once mischievously said, "It is impossible to die unless you are immortal"; quoted in *The Cavalier Daily* (University of Virginia), September 29, 1977, Stanford University, Hoover Institution Archives, Voegelin Papers, box 82, file 3; hereafter cited as Voegelin Papers. To Thomas Hollweck he said: "There is no after life. Immortality is the Presence of the Divine in life. We are Immortal because we are mortal"; Hollweck, "Conversations with Eric Voegelin," Voegelin Papers, box 112, file 330, p. 23.
141. See Voegelin's discussion of historiogenesis in Voegelin, *Anamnesis: On The Theory of History and Politics*, ed. David Walsh (Columbia: University of Missouri Press, 2002), *CWEV* 6:101–39.

142. See Voegelin "Anxiety and Reason," in *The Ecumenic Age*, Vol. 4 of *Order and History* ed. M. Franz (Columbia: University of Missouri Press, 2000), *CWEV* 17, esp. 57–67. Page numbers for this work are given in parentheses.

143. Voegelin, "What Is History?," in *What Is History?*, 21.

144. Lonergan used the term "differentiation" in a manner very close to that of Voegelin (Lonergan, *Insight*, 265–66). See also Thomas J. McPartland, *Lonergan and the Philosophy of Historical Existence* (Columbia: University of Missouri Press, 2001), and Glen Hughes, *Transcendence and History: The Search for Ultimacy from Ancient Societies to Postmodernity* (Columbia: University of Missouri Press, 2003), 183–87. Interestingly enough, Marshall Sahlins, who, so to speak, had nothing in common with Voegelin or Lonergan, spoke of "compactness" in a way similar to Voegelin; see Sahlins, *Stone Age Economics* (Chicago: Aldine, 1972), 75–76.

145. Page numbers are in parentheses in the text.

146. Voegelin here cited Kant's "Conclusion" in the *Critique of Practical Reason*: "Two things fill the mind with ever new and increasing admiration and awe: the starry heaven above me and the moral law within me." The starry heaven was the celestial universe through which Kant apprehended its divine ground; the moral law was "the presence of a divine reality that has become transmundane in the conscious existence of a man who has become mundane"; *Immanuel Kant's Critique of Pure Reason*, trans. Norman Kemp Smith (London: Macmillan, 1983), 128. Just as the sun will rise tomorrow, human being remains in this in-between.

147. Colin Renfrew, *Prehistory: The Making of the Human Mind* (London: Phoenix, 2007), viii. Renfrew's questions were first raised by St. Augustine in his *Confessions*, bk. 10. The simple answer to the question, "Who am I?" or "Who are we?," as Hannah Arendt observed is, "You are a human being—whatever that may be." The answer to the question, "What am I?" can be supplied only by a God who made human being: "The question about the nature of man is no less a theological question than the question about the nature of God; both can be settled only within the framework of a divinely revealed answer"; see Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958), 10–11.

148. Voegelin, *Israel and Revelation*, 51–52.

149. Even at the time, however, William Foxwell Albright criticized Voegelin for having ignored archaeological evidence that told a more nuanced story. See Albright, "Review of *Israel and Revelation*," *Theological Studies* 22 (1961): 275–76.

Chapter 2

1. Marie König, "À propos de l'Évolution continuelle de la Civilisation pendant les Périodes préhistoriques," in *Eternità e Storia: I*

Valori permanenti nel Divenire storico (Florence: Vallecchi 1970), 131–42. Voegelin also presented a paper at this conference, "Equivalences of Experience and Symbolization in History," reprinted in Voegelin, *Published Essays, 1966–1985*, ed. Ellis Sandoz (Baton Rouge: Louisiana State University Press, 1990), *CWEV* 12:115–33.

2. König, "À propos de l'Évolution continuelle," 131.

3. König relied on the early papers of A. C. Blanc. Later analyses have cast doubt on the soundness of his interpretation. See, for example, Mary C. Stiner, "The Faunal Remains from Grotta Guattari: A Taphonomic Perspective," *Current Anthropology* 32 (1991): 103–17. Stiner concluded that "the surface fauna of Grotta Guattari, once interpreted as the contents of a Neandertal ritual chamber, appears on taphonomic grounds to represent a spotted hyena maternity den" (116). Taphonomy investigates the process by which organisms fossilize and, more broadly, how they endure long enough to be studied by archaeologists. See also Tim D. White and Nicholas Toth, "The Question of Ritual Cannibalism at Grotta Guattari," *Current Anthropology* 32 (1991): 118–38, and Robert G. Bednarik, "A Taphonomy of Paleoart," *Antiquity* 68 (1994): 68–74.

4. Carving in a rock-shelter in the Fontainebleau forest: https://2.bp.blogspot.com/-lOfDuWrInrU/VO6IKU0WnqI/AAAAAAAAEU4/y0gCx8eUwwQ/s1600/DC1.jpg.

5. Sumerian celestial bull: https://i.pinimg.com/originals/20/b7/80/20b780b36d39a26c8f80553ec6d972bf.jpg.

6. König, "À propos de l'Évolution continuelle," 142.

7. Gabriele Meixner, *Auf der Suche nach dem Anfang der Kultur: Marie E. P. König, Eine Biographie* (Munich: Franenoffensiv, 1999), 139. See also Tilo Schabert, "Eric Voegelin's Workshop: A Study in Confirmation of Barry Cooper's Genetic Paradigm," in *Hunting and Weaving: Empiricism and Political Philosophy*, ed. Thomas Heilke and John von Heyking (South Bend, IN: St. Augustine's Press, 2013), 242–44.

8. The collection is in the Voegelin Papers, box 21, file 15. References will be given by date. Some of Voegelin's letters are reproduced in *Selected Correspondence, 1950–1984*, ed. Thomas A. Hollweck (Columbia: University of Missouri Press, 2007), *CWEV* 30.

9. Voegelin to König, October 14, 1968, in Voegelin, *Selected Correspondence*, 576–67. The English translation substituted "third century" for third millennium (*des 3 Jahrtausends*).

10. König to Voegelin, October 20, 1968, Voegelin Papers, box 21, file 15.

11. Voegelin to König, September 28, 1970, in Voegelin, *Selected Correspondence*, 669.

12. Giorgio de Santillana and Hertha von Dechend's *Hamlet's Mill: An Essay on Myth and the Frame of Time* (London: Macmillan, 1969). *Hamlet's Mill* discussed paleoastronomy and will be included in the subject matter for a sequel to this book.

13. Voegelin to König, November 23, 1970, in Voegelin, *Selected*

Correspondence, 680–81.

14. Voegelin often used the highly formal salutation *Sehr verehrte gnädige Frau König*, "Highly honoured, gracious Madame König," whereas she usually addressed Voegelin as *Lieber Professor*, "Dear Professor." Never was it "Dear Marie" or "Dear Eric."

15. Meixner, *Auf der Suche*, 141.

16. Hollweck, "Editor's Introduction," in Voegelin, *Selected Correspondence*, 5.

17. *Selected Correspondence*, 664.

18. Ibid., 675.

19. Voegelin Papers, box 116, files 120–22; and Voegelin's letter to Friedrich Engel-Janosi, July 14, 1977, in Voegelin, *Selected Correspondence*, 824.

20. Details of her life are taken from Meixner, *Auf der Suche*.

21. König to Voegelin, March 31, 1972, Voegelin Papers.

22. According to Margaret Conkey, there is also resistance to the serious discussion of Paleolithic art based on a combination of scientism and macho Indiana Jones aspirations. She had American archaeology in mind, but the observation could be generalized. See Conkey, "Paleovisions: Interpreting the Imagery of Ice Age Europe," in *The Art of Interpreting: Papers in Art History from The Pennsylvania State University*, ed. Susan C. Scott (University Park: Pennsylvania State University Press, 1995), 9:12.

23. See H. Hassmann, "Archeology in the 'Third Reich,'" in *Archeology, Ideology and Society: The German Experience*, ed. Heinrich Härke (Frankfurt: Peter Lang, 2000), 65–139. See also Härke, "'The Hun Is a Methodical Chap,'" in *Theory in Archeology: A World Perspective*, ed. Peter J. Ucko (London: Routledge, 1995), 46–60; Bettina Arnold, "The Past as Propaganda: Totalitarian Archeology in Nazi Germany," *Antiquity* 64 (1990): 464–78; Suzanne L. Marchand, *Down from Olympus: Archeology and Philhellenism in Germany, 1750–1970* (Princeton, NJ: Princeton University Press, 1996), chaps. 9 and 10; Martijn Eickhoff, "German Archeology and National Socialism: Some Historiographical Remarks," *Archeological Dialogues* 12, no. 1 (2005): 73–90; Bettina Arnold and Henning Hassmann, "Archaeology in Nazi Germany: The Legacy of the Faustian Bargain," in *Nationalism, Politics, and the Practice of Archaeology*, ed. Philip L. Kohl and Clare Fawcett (Cambridge: Cambridge University Press, 1995), 70–81; David W. Anthony, "Nazi and Eco-feminist Prehistories: Ideology and Empiricism in Indo-European Archaeology," in Kohl and Fawcett, eds., *Nationalism, Politics and the Practice of Archaeology*, 82–98; Heinrich Härke, "All Quiet on the Western Front? Paradigms, Methods and Approaches in West German Archaeology," in *Archaeological Theory in Europe: The Last Three Decades*, ed. Ian Hodder (London: Routledge, 1991), 187–222. See also König's remarks in "Die Symbolik des Urgeschtlichen Menschen," *Symbolion* 5 (1966): 121–28, and, more generally, M. H. Kater, *Das "Ahnenerbe" der SS, 1936–1945: Ein Beitrag zur Kulturpolitik des Dritten Reiches*, 2nd ed.

(Munich: Oldenburg, 1970).

24. For an analysis of the problems of ethnographic analogy, consider the observations of R. Lee Lyman and Michael J. O'Brien, "The Direct Historical Approach, Analogical Reasoning, and Theory in Americanist Archeology," *Journal of Archeological Method and Theory* 8 (2001): 303–42. Ethnographic analogy is a recurring problem among paleoscientists and is discussed several times, in different contexts, later in this book.

25. König, "Problème des Images Quaternaires," *Congrès préhistorique de France: Compte rendu de la XIVe session, Strasbourg-Metz, 1953* (Paris: Société préhistorique française, 1955), 361. See also her critical remarks in König, "Zur geistigen Situation des Jungpäleolithikers," *Psychologische Beitrage* 3 (1957): 476–88. An edited English version is "The Mentality of Upper Paleolithic Man in Europe," *Mankind Quarterly* 11, no. 3 (1971): 153–63. König based her argument on the difference between the historically archaic and the contemporary "primitive" on Heinz Werner, *Comparative Psychology of Mental Development*, rev. ed. (New York: International University Press, 1957), 1st ed., 1940; the German edition, which König often cited, was published in 1953. The distinction between developmental and evolutionary psychology was for Werner fundamental. The former had no concern with the speculative history of humanity or the factual aspects of culture but with "developmental levels" and formal characteristics of mental activity (*Comparative Psychology*, 17). As we argue below, König's adaptation of Werner's distinction was more precisely described in Voegelin's distinction between compact and differentiated experience and symbolization of reality. Werner also spoke of differentiation in an equivalent way, though he did not contrast differentiation with compactness (see *Comparative Psychology*, 59, 104, 299). In effect, Werner supplied König with a theory of human being, a (quasi-) philosophical anthropology.

26. König, "Interprétations paléolithiques d'après les plus anciens Textes de l'Histoire," *Congrès préhistorique de France: Compte rendu de la XVe Session, Poitiers-Angloulême, 1956* (Paris: CNRS, 1957), 632. One of the implications that König drew was that Europe was the original "home" of culture and that contemporary Europeans were still in touch with their prehistoric and Paleolithic roots. See König, "Interprétations paléolithiques," 633, and Meixner, *Auf der Suche*, 63–65.

27. Philip G. Chase and Harold L. Dibble, "Middle Paleolithic Symbolism: A Review of Current Evidence and Interpretations," *Journal of Anthropological Archeology* 6 (1987): 263–96; Robert G. Bednarik, "Paleoart and Archeological Myths," *Cambridge Archeological Journal* 2, no. 1 (1992): 27–43. Camille Arambourg made a similar argument in his 1943 book, *La Genèse de l'Humanité* (Paris: Presses Universitaires de France, 1943), 116–17, which König also cited.

28. Meixner, *Auf der Suche*, 73.

29. See, for example, the condescending review of König's first book, *Das Weltbild des Eiszeitlichen Menschen*, by Karl J. Narr, later professor of prehistory at the University of Munster, in Narr, review of *Das Weltbild*

des Eiszeitlichen Menschen, by Marie König, *Anthropos* 49 (1954): 727.

30. Meixner, *Auf der Suche*, 77.

31. Marie König, *Das Weltbild des Eiszeitlichen Menschen* (*The Image of the World of Ice Age Humanity*) (Marburg: N. G. Elwert Verlag, 1954).

32. Ibid., 35–37.

33. Ibid., 86–90. Pit at Lascaux: https://d.ibtimes.co.uk/en/full/1571640/lascaux-cave-paintings.jpg.

34. Marie König, *Am Anfang der Kultur: Die Zeichensprache des frühen Menschen* (Berlin: Gebr. Mann Verlag, 1973). Some of the details of her argument are discussed in the following section. We discuss additional methodological issues below.

35. Arturo Schwartz, "La Dimensione verticale dell'androgino immortale," *Valcamonica Symposium, The Intellectual Expressions of Prehistoric Man: Art and Religion* (Brescia: Edizioni del Centro, 1979), 79–97.

36. Gilles Tassé, "Les Petroglyphes du Bassin parisien," in *Valcamonica Symposium (1968)*, ed. Emmanuel Anati (Capo di Ponte: Edizioni del Centro, 1970), 95–100. Tassé later wrote a thorough and orthodox study: Tassé, *Pétroglyphes du Bassin parisien*, XVIe Supplément à Gallia Préhistoire (Paris: CNRS, 1982).

37. König's intervention is at p. 120 of A. Beltrán, "Débat sur l'Art rupestre de la Péninsule Ibérique et de France," *Valcamonica Symposium* (1968): 101–21. Anati had visited the caves and *abris* of the Île-de-France precisely once, a decade earlier, guided by J.-L. Baudet, whom we discuss below. See Emmanuel Anati, "Quelques Réflections sur l'Art rupestre d'Europe," *Bulletin de la Société préhistorique française* 57 (1960): 692–712.

38. See Marie König "Étude des Incisions rupestres comme Manifestation d'un Stade d'Évolution de l'Esprit humain," *Valcamonica Symposium* (1968): 515–30. A similar event took place at the 1972 Symposium. There König referred to images of bulls with crescent horns, initially discussed in *Das Weltbild*, as "organizing lunar time," and other equivalent ways of symbolizing months. Anati replied: "It is impossible to generalize." This was also part of the "General Discussion." See Anati, ed., *Les Religions de la Préhistoire: Actes de Valcamonica Symposium, 1972* (Capo di Ponte: Edizioni del Centro, 1975), 439.

39. Meixner, *Auf der Suche*, 95, 180–83.

40. Ibid., 74. See also König, "Die Symbolik des Urgeschichtlichen Menschen," 124.

41. Meixner, *Auf der Suche*, 143–44.

42. König, "Comparisons entres les Signes dans les Grottes de la Forêt de Fontainebleau et la Numismatique Gauloise," *Cahiers Numismatiques* 50 (December 1976): 98.

43. Celtic coin: http://blog.cgbfr.com/userfiles/image/gauloises/bga_413075.jpg. Athenian coin: https://i.ebayimg.com/00/s/NDU5WDUwMA==/z/IMkAAOxyUylTVhz3/$_35.JPG?set_id=2.

44. König, "Comparisons," 89, 91, 101. See also Marie König "The

Development of Culture in the Light of Archaeology," *Mankind Quarterly* 13, no. 3 (1973): 151–57.

45. Marie König, "Celtic Coins: A New Interpretation," *Archaeology* 19 (1966): 28. Her most extensive treatment of the problem, König, *Das Rätsel der keltischen Münzen* (Maschen: Hallonen Verlag, 1975), incorporated much of her earlier work. Her final treatment was König, "Les Monnaies celtiques: Témoignages de temps plus anciens," in *Mélanges offerts au Docteur J.-B. Colbert de Beaulieu*, ed. Colette Bémont, C. Delplace, and B Fischer (Paris: Le Léopard d'Or, 1987), 501–13.

46. Meixner, *Auf der Suche*, 136–37. See also ibid., 147–49, for a discussion of the reviews of König's work in numismatics, and 155–58 for an account to König's relations with Count Colbert, the premier authority on Celtic coins.

47. See Margaret W. Conkey and Christine Hastorf, eds., *The Uses of Style in Archaeology* (Cambridge: Cambridge University Press, 1990).

48. König mentioned several other paleoscientists who provided her with relevant evidence for her own interpretation in *Am Anfang*, 11–26. Of particular importance in this respect was James-Louis Baudet, who helped introduce König to the caves and rock-shelters of the Île-de-France but took a highly proprietary view of these "documents," so much so that he did not wish König to publish anything on the subject; see Meixner, *Auf der Suche*, 117–20. For a discussion of Baudet and his work, see Tassé, *Pétroglyphes du Bassin parisien*, 16–21. Baudet however published extensively on the significance of the engravings in the rock-shelters and caves in the Paris basin. See Annette Laming-Emperaire, *La Signification de l'Art rupestre paléolithique* (Paris: Picard, 1962), 332–33.

49. Moshe Barasch, *Icon: Studies in the History of an Idea* (New York: New York University Press, 1992), 1–9, made a similar distinction between the aesthetics of an image and its ability to convey a truth or, more generally, a meaning.

50. In part III of this book we discuss the changes among French paleoscientists from a focus on the aesthetics of individual images to a tentative consideration of the meaning of the entire complex of parietal imagery.

51. König, "Problème des Images Quaternaires," 360. A cult, she later wrote, is "the symbolic form that gives substance to religion" (König, "The Development of Culture," 153).

52. König, "General Comments," in Anati, ed., *Les Religions de la Préhistoire*, 587–88. Voegelin and König discussed the effects of positivism in several exchanges. See König to Voegelin, March 8, 1971; Voegelin to König, March 23, 1972, Voegelin Papers.

53. Whether even compact symbolism was quite so compact as we may assume is suggested by the observation that the main food for those who created the imagery at Lascaux was reindeer (as is indicated by the large numbers of reindeer bones found in the cave) but none was represented on the walls.

54. König, *Am Anfang*, 19.

55. For example, see André Leroi-Gourhan, *Les Religions de la Préhistoire* (Paris: Presses Universitaries de France, 1964), chap. 5.

56. König, *Am Anfang*, 22. This was also the approach of Werner, Vallois, and Arambourg, as we noted above.

57. Ibid., 34.

58. Ibid., 26.

59. See Marie König, "À propos de l'Évolution spirituelle de l'Homme paléolithique en recourant à l'Exemple de différents Types d'Outils," *University of Lisbon: Review of the Faculty of Letters*, 3, no. 10 (1967): 39–40. A "concept," she wrote, is "the result of an act of thought."

60. See Timothy Darvill, ed., *Concise Oxford Dictionary of Archaeology*, 2nd ed. (Oxford: Oxford University Press, 2008), 84.

61. Marie König, "Comment l'Homme préhistorique pensait-il?," *Congrès préhistorique de France: Compte rendu de la XVIe session, Principauté de Monaco*, 16 (1959): 774. See also König, "The Development of Culture," 151–57. As we argue in chapter 3, Alexander Marshack likewise "decentered" the discussion from the material object to the cognitive and imaginative human action that produced it.

62. See, for example, the story of her recovery of the location of a rock-shelter that had previously been lost in König, Le Groupe Préhistoire, "L'Auvent Marie Koenig à Moigny," *Chronique Archéologique* 3 (October 1975): 11–18.

63. This commonly accepted account of the development of stone tools is based on Grahame Clark, *World Prehistory: A New Outline*, 2nd ed. (Cambridge: Cambridge University Press, 1969). Clark's work was contemporary with König's, but I have found no evidence she was familiar with it.

64. Alain Bénard, "L'Art rupestre de Fontainebleau: Actualité de Recherche," *Actes des Congrès nationaux historiques et scientifiques* 125 (Lille, 2000), 169–81, said the art was "attributed" to the Mesolithic, 11.6 KYA to the advent of agriculture, between 6 and 7 KYA, depending on the region. He did not, however, provide any citation.

65. König first developed her conceptual pyramid, so far as I can tell, in 1966 in König, "Die Symbolik des Urgeschichtlichen Menschen," 129–31. See also Marie König, "Über die Entwicklung der Begriffe des vorgeschichtlichen Menschen dargestellt am Beispiel der Werkzeugtypen," in *Actes du VIIe Congrès International des Sciences préhistoriques et protohistoriques*, ed. Jan Filip (Prague: UNESCO, 1970), 70–73. In a letter to Voegelin, König discussed her "*Kulturpyramide*" as a heuristic, an aid to thinking about the problem, not a conceptual or scientific account; König to Voegelin, March 31, 1972, in Voegelin Papers.

66. König, *Am Anfang*, 30.

67. See also Meixner, *Auf der Suche*, 108–10.

68. See König, "Discussion," in Anati, ed., *Les Religions de Préhistoire*, 587.

69. König, *Am Anfang*, 32. See also the more recent discussion by

Michel Lorblanchet and Paul Bahn, *The First Artists: In Search of the World's Oldest Art* (London: Thames and Hudson, 2017), chap. 3, 95–108.

70. The dating of "loess balls" (loess is wind-blown sediment) is technically very difficult. See F. E. Zeuner, "Loess Balls from the Lower Mousterian of Achenheim (Alsace)," *Journal of the Royal Anthropological Institute of Great Britain and Ireland* 83 (1953): 65–67; see also Paul Wernert, "Les Boules de Loess d'Achenheim: Essai de Paléo-Ethnographie comparée," *Cahiers alsaciens d'Archéologie, d'Art, et de Histoire* 5 (1961): 5–18; Stephen W. Edwards, "Nonutilitarian Activities in the Lower Paleolithic: A Look at Two Kinds of Evidence," *Current Anthropology* 19, no. 1 (1978): 135–37. More recently the dating of "polyhedrous, sub-spheroids, spheroids, and bolas" (PSSB), to use the original classification of Mary Leakey, or broadly speaking "stone balls," has been pushed back well into the Lower Paleolithic (2.6 MYA). See, for example, Pamela Willoughby, "Spheroids and Battered Stones in the African Early Stone Age," *World Archaeology* 17 (1985): 44–60; Ran Barkai and Avi Gopher, "On Anachronism: The Curious Presence of Spheroids and Polyhedrous at Acheulo-Yabradian Qesem Cave," *Quaternary International* 398 (2016): 118–28.

71. König, *Am Anfang*, 34.

72. As the Acheulean loess balls were long preceded by the PSSB production sequence, so too were the spheres/vaults of symbolic skulls long preceded by cup-marks (cupules), which are both concave and convex, having been dated (like the stone balls) to the time of *Homo erectus*. See J.-M. Le Tensorer et al., "The Oldowan Site Aïn al Fil (El Kowm, Syria) and the First Humans in the Syrian Desert," *L'Anthropologie* 119 (2015): 581–94.

73. König, *Am Anfang*, 35.

74. Leroi-Gourhan, *Les Religions de la Préhistoire*, 73–80.

75. Marie König, "Frau Neandertaler hatte Kultur," *Emma* 8 (1982): 54–59. "Visible, wild, Nature," Edmund Leach wrote, "is a jumble of random curves; it contains no straight lines and few regular geometrical shapes of any kind. But the tamed, man-made world of Culture is full of straight lines, rectangles, triangles, circles, and so on"; Leach, *Culture and Communication: The Logic by Which Symbols Are Connected* (Cambridge: Cambridge University Press, 1976), 51. See also Tim Ingold, *Lines: A Brief History* (London: Routledge, 2007), 154–55.

76. König, *Am Anfang*, 43. The discovery of the "Tata plaque," dated at 100 KYA, which may also have expressed the two world axes, pushed this spiritual genesis deep into Neanderthal times; see L. Vertes, "Churinga de Tata (Hongrie)," *Bulletin de la Société préhistorique française*, 56 (1959): 604–11. See also H. P. Schwartz and I. Skoflek, "New Dates for the Tata, Hungary Archaeological Site," *Nature* 295 (February 1982): 590–91. See also Meixner, *Auf der Suche*, 192–93. The plaque is circular with a crack in it and a line inscribed at right angles to the crack. We discuss the Tata plaque below in connection with Marshack. See note 87, below, for a link to the image.

77. See also Jacques Hinoout, “Abris ornés des Massifs gréseux du Tardenois (Aisne),” *Cahiers archéologiques de Picardie* 1 (1974): 33–49.

78. At a hill called “Mont des Ancêtres” in the Coquibus woods near Milly-la-Forêt, the placing of stones or “walls” remind one of the “medicine wheels” of North America; that is, these arranged stones may be remnants of sites of celestial alignments.

79. Rock formations at Fontainebleau: http://a52.idata.over-blog.com/2/61/81/68/Le-long-Boyau/Long-Boyau-002.jpg; and http://irational.org/climbing/fontainebleau/fontainebleau_forest_boulder_rock07.jpg.

80. König, *Am Anfang*, 69–70; Meixner, *Auf der Suche*, 117–19. Dating the signs and ideographs in the Île-de-France is complex and controversial. J. L. Baudet, “Les Industries des Grottes ornées de l’Île-de-France,” *Congrès préhistorique de France*, Session XII (Paris, 1950), 119–31, cautiously argued for a Mesolithic date, around 10 KYA. In 1951, in Baudet, “Les Figures anthropomorphes de l’Art rupestre de l’Île-de-France,” *Bulletins et Mémoires de la Société d’Anthropologie de Paris* 10, no. 2 (1951): 56–66, and Baudet, “L’Art rupestre préhistorique de l’Île-de-France,” *Comptes rendus des Séances de l’Institut français d’Anthropologie* 71 (1951): 18–22, he dated the earliest figures as belonging to the Middle Paleolithic, at least 30 KYA. He repeated this argument in Baudet, “Les Industries des Grottes ornées de L’Île-de-France,” *Congrès préhistorique de France: Compte rendu de la XIIIe session, Paris 1950* (Paris: Société préhistorique française, 1952): 120–31, assigning the figures to the Aurignacian (35–40 KYA). See also Baudet, “Contributions à l’Étude du Paléolithique ancien d’Europe septentroniale,” in *Frühe Menschheit und Umwelt*, Vol. 1, *Archäoligische Beitrage, Festschrift für Alfred Rust*, ed. Karl Grip et al. (Cologne: Böhlau Verlag, 1970), 34–51. In 1990, Michel Girard and Jacques Hinout, “Essai de Chronologie de Sites mésolithiques de Bassin Parisien par l’Analyse pollinique,” *Bulletin de la Société préhistorique française* 87, no. 4 (1990): 113–16, using carbon-14 analysis of pollen in sites that were not disturbed by bioturbation dated the earliest evidence at 9 KYA. In 1993, Anne Bridault and Angel P. Bautista, “La Grotte ‘à la peinture’ à Larchant (Seine et Marne), Lieu-dit Les Dégoûtants à Ratard: La Faune (Mésolithique, Bronze final, et Gallo-romain),” *Préhistoire et Protohistoire en Champagne-Ardenne* 17 (1993): 75–81, found evidence of Mesolithic animal remains at Larchant, which provided them with a date of around 10 KYA. Tassé, *Pétroglyphes du Bassin parisien*, chap. 5, argued that the engravings can only be dated relative to one another, with the ones that show the most ritual use being the oldest. A survey of this problem is in Michele Bouyssonnie, Michel Cluchet, and Louis Girard, “Les Gravures rupestres de Fontainebleau,” *Archaeologica* 82 (May 1975): 8–23.

81. See König, “Die Symbolik des urgeschichtlichen Menschen,” 135; and König, “The Development of Culture,” 154.

82. König, *Am Anfang*, 69.

83. König, “Zur geistige Situation des Jungpäleolithikers,” 479. König

used the term “ideological” in an archaeological sense of a set of beliefs shared by members of a specific community. See Darvill, *Concise Oxford Dictionary of Archaeology*, 205.

84. The headings for this section on “Space” and the following sections on “Time” and “Number” correspond to König’s chapters 2, 3, and 5 in *Am Anfang*. The subject matter headings were borrowed from Werner, *Comparative Psychology*, 117–20, 167–70, 182–86, which König cited in her bibliography as her source

85. It should be added that once the above- and the netherworld were differentiated, it was self-evident that human being existed “between” the two parts of the world. This “in-between” status was central to the philosophical anthropology of Plato and Aristotle and was discussed at length in Voegelin’s later work. See Barry Cooper, *Consciousness and Politics: From Analysis to Meditation in the Late Works of Eric Voegelin* (South Bend, IN: St. Augustine’s Press, 2018), 276–79; William Desmond, *Being and the Between* (Albany: SUNY Press, 2001); and Desmond, *God and the Between* (Oxford: Blackwell, 2008).

86. König to Voegelin, October 20, 1968, Voegelin Papers.

87. Marcel Otte, “Paleolithic Mosaics,” in *An Enquiring Mind: Studies in Honor of Alexander Marshack*, ed. Paul G. Bahn (Cambridge, MA: Peabody Museum, Harvard University, 2009), 229.

88. König, *Am Anfang*, 94.

89. Tata plaque: http://humanorigins.si.edu/sites/default/files/styles/landing_page_child/public/images/square/3.9.1-1_fossil_mammoth_tooth_plaque_tata_jddh_s.jpg?itok=LMr1EacM.

90. Willendorf Venus: https://donsmaps.com/images28/venuswillendorfimg_1469sm.jpg.

91. König, *Am Anfang*, 100. See also Tilo Schabert, *Stadtarchitektur: Spiegel der Welt* (Zürich: Benziger, 1990), and Schabert, *Die Architektur der Welt: Ein kosmologische Lektüre architektonischer Formen* (Munich: Fink, 1999), and Schabert, “The Cosmology of the Architecture of Cities,” *Diogenes* 156 (1991): 1–31.

92. König, *Am Anfang*, 103.

93. Tassé, who made no reference to König in his later work, also noted that the circles and “antlers” carved on the walls suggested “attributes of certain Celtic divinities” represented on Celtic coins; see Tassé, *Pétroglyphes du Bassin Parisien*, 72.

94. König, *Am Anfang*, 142.

95. Fontainebleau rock-shelter inscription: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRpCQPrjXuvXZhXLZXwGZXibtZLMCn-x6HvTQ4GF9Rtn1c6G-qE.

96. König, *Am Anfang*, 143.

97. See Paul G. Bahn and Claude Couraud, “Azilian Pebbles: An Unsolved Mystery,” *Endeavour*, 8, no. 4 (1984): 156–58.

98. One might make the same argument regarding North American

"rock art," with the racks of bighorn sheep, which are often "exaggerated," serving in the place of European aurochsen. See David S. Whitley, *Cave Paintings and the Human Spirit: The Origins of Creativity and Belief* (Amherst, NY: Prometheus Books, 2009), 93–94; 145. The notion that the horns on the Lascaux bulls are images of the moon and so of the order of time was supported by the argument of Eduard Hahn, that aurochsen were first domesticated not for beef but for "religious purposes," such as sacrifice. Animals were selected and selectively bred, he argued, because the "gigantic curved horns resembled the lunar crescent"; Hahn, *Die Hausteire und ihre Beziehungen zur Wirtschaft des Menschen* (1896), is summarized in Eric Isaac, "On the Domestication of Cattle," *Science* 137 (1962): 195–204. Breuil's "twisted perspective" (Leroi-Gourhan called it a "bi-angular perspective") showed the body of a beast in profile, and the front, with horns, was represented face-on. Sometimes the hooves were also presented "hoof-on."

99. See Meixner, *Auf der Suche*, 168–72. See also Marie König, "Die Frau im Kult der Eiszeit," in *Weib und Macht: Fünf Million Jahre Urgeschichte der Frau*, ed. Richard Fester et al. (Frankfurt: Fischer, 1979), 107–58.

100. https://www.donsmaps.com/images29/bisonlamouthe.jpg.

101. Hence the words of the Apostle's Creed regarding Jesus: he "was crucified, dead and buried: He descended into hell; the third day he rose again from the dead; He ascended into heaven." This version is taken from the Anglican *Book of Common Prayer* (1549), familiar from my youth. Even then I wondered why Jesus was out of sight for three rather than one or twenty days. In a similar vein, Caleb Everett cleared up another puzzle from my youth, why God provided Moses with ten, not nine or eleven, commandments; see Everett, *Numbers and the Making of Us* (Cambridge, MA: Harvard University Press, 2017), 250–56.

102. See link at note 31, above.

103. König, *Am Anfang*, 235.

104. Jean Clottes, much later, considered this anthropomorphic image a shamanic psychopomp tasked with conducting souls to the netherworld; see Clottes, "Retour à Lascaux," in *Passion Préhistoire* (Paris: La Maison des Roches, 2003), 69–70, 77–78. We discuss the "shamanic hypothesis" in part III.

105. König, *Am Anfang*, 238.

106. König, *Am Anfang*, 240.

107. Ibid., 246.

108. Ibid., 250. See also Voegelin to König, December 20, 1972, and König to Voegelin, December 31, 1972, Voegelin Papers.

109. König, *Am Anfang*, 252. See J.-B. Colbert de Beaulieu, review of *Am Anfang der Kultur*, *Cahiers Numismatiques* 49 (September 1976): 78–80.

110. König, *Am Anfang*, 213.

111. Ibid., 314. Again König provided more details than she did in *Das Weltbild*.

112. Ibid., 314–18.
113. See E. A. S. Butterworth, *The Tree at the Navel of the Earth* (Berlin: De Gruyter, 1970).
114. König, *Am Anfang*, 326.
115. Ibid., 346.
116. Marie König, *Unsere Vergangenheit ist älter: Höhlenkult Alt-Europas* (Frankfurt: Fischer Verlag, 1980). A French translation by Frédérique Daber, *Notre Passé est encore plus ancien* (Paris: Laffont 1982), also exists. As with the relation of *Das Weltbild* to *Am Anfang der Kultur*, there is some repetition of points made in *Am Anfang*, which we will ignore apart from the observation that König seemed to be much more confident of her position in this book.
117. König, *Unsere Vergangenheit*, 28.
118. Henri de Lumley, "L'Homme de Tautavel," paper presented at XI Congrès de l'Union internationale des sciences préhistoriques et protohistoriques, Mainz 1979, 36–40. See also Lumley, *L'Homme de Tautavel: La Caune de l'Arago de 700000 à 100000 ans* (Paris: Editions du Patrimoine, 2014).
119. See also Weston LaBarre, *Muelos: A Stone Age Superstition about Sexuality* (New York: Columbia University Press, 1985).
120. König, *Unsere Vergangenheit*, 45. In fact, later dating of *H. erectus tautavelensis* would increase the number to more than 400 KY; see A. G. Wintle, "Dating Tautavel Man," *Nature* 304 (July 1983): 118–19.
121. König cited Alfred Rust as the source of this interpretation. Like her, he was also a "private scholar," best known for his work on a late Paleolithic complex on the North European plain called the German Hamburgian. Unlike the entirely apolitical König, Rust joined the *Ahnenerbe*, the SS-sponsored institution charged with producing archaeological evidence of Aryan and Nordic greatness and racial superiority.
122. König, *Unsere Vergangenheit*, 50.
123. Ibid., 70.
124. König, "The Development of Culture," 156.
125. König, *Unsere Vergangenheit*, 84.
126. "The sun does not have horns but a crown of rays that can be expressed in the flowing mane of a horse" (König, "Les Monnaies celtiques," 502–3).
127. König, *Unsere Vergangenheit*, 105. As we shall see in part III, the more "orthodox" French archaeologists have recently come to a similar conclusion.
128. Gregory J. Wightman, *The Origins of Religion in the Paleolithic* (Lanham, MD: Rowman and Littlefield, 2015), 177.
129. König, *Unsere Vergangenheit*, 111.
130. Ibid., 149.
131. Ibid., 200.
132. Ibid., 235–36.
133. Ibid., 127.

134. Ibid., 263–65.
135. Ibid., 136.

Chapter 3

1. Alexander Marshack, *The World in Space: The Story of the International Geophysical Year* (New York: Thomas Nelson and Sons, 1958). Details of Marshack's life can be found in several obituaries and a *New Yorker* profile. See Paul G. Bahn, "Alexander Marshack: 1918–2004," *Antiquity* 79 (2005): 489; *Sunday Times*, January 22, 2005; Jennifer Bayot, "Alexander Marshack, 86, Dead: Studied Stone Age Innovations," *New York Times*, December 28, 2004; Calvin Tomkins, "A Reporter at Large: Thinking in Time," *New Yorker*, April 22, 1974, 114–28.

2. See the account in his major work, Alexander Marshack, *The Roots of Civilization: The Cognitive Beginnings of Man's First Art, Symbol, and Notation* (New York: McGraw-Hill, 1972), 10.

3. Ibid., 11.

4. The "historical" problem Marshack had discovered is equivalent to one we discussed in chapter 1 using the language of philosophical anthropology and political science, as the differentiation of consciousness.

5. Marshack, *Roots*, 14.

6. Jean De Heinzelin, "Ishango," *Scientific American* 206 (June 1962): 105–16.

7. See A. S. Brooks and C. C. Smith, "Ishango Revisited: New Age Determinations and Cultural Interpretations," *African Archaeology Review* 5 (1987): 65–78.

8. De Heinzelin, "Ishango," 109–10. Ishango bone: https://i.pinimg.com/originals/fc/a4/c3/fca4c3c21ee5e02d0f66d102bda1e601.jpg.

9. Marshack, *Roots*, 16.

10. Tomkins, "A Reporter at Large," 117.

11. Marshack to Svirsky, April 1, 1964, Marshack Papers, Peabody Museum Archives, Harvard University, 2005.16.1. Hereafter cited as Marshack Papers; subsequent citations to Marshack's correspondence are to this collection and are given by date. See also George Gheverghese Joseph, *The Crest of the Peacock: Non-European Roots of Mathematics*, 3rd ed. (Princeton, NJ: Princeton University Press, 2011), 30–35.

12. Marshack, *Roots*, 140. For example, one might speak of the spring of the big flood (and not of 2013) or the spring of the big fire (and not of 2016) in recent Alberta history.

13. Marshack, *Roots*, 142–43.

14. Ibid., 143.

15. Marshack apparently was also at work on a book, *The Making of Man*, for the juvenile books series of Basic Books. It was not published either. See Marshack to Arthur Rosenthal, June 22, 1964, Marshack

Papers.

16. See Gerald S. Hawkins, “Stonehenge Decoded,” *Nature* 200 (October 1963): 306–88; Hawkins, “Stonehenge: A Neolithic Computer,” *Nature* 202 (June 1964): 1258–61, and the later account Hawkins and J. B. White, *Stonehenge Decoded* (Garden City: Doubleday, 1965). See also Marshack to Hawkins, June 24, 1964, Marshack Papers.

17. Movius (1907–87) was born in Newton, MA, into a distinguished New England family (he was a cousin of Leverett Saltonstall, Massachusetts governor and U.S. senator). He entered Harvard College in 1926 to play football and stayed to graduate in 1937 with a PhD in archaeology. He remained at Harvard and the Peabody Museum, apart from wartime service in the USAAF as an intelligence officer. He conducted fieldwork in the Old World from Europe to Burma and Java. He is responsible for the Movius Line (1948) that distinguished the stone tools technologies of Africa, Europe, and west and south Asia from those of east and southeast Asia. He was also one of the first archaeologists to use carbon-14 dating. His multivolume report on the Abri Pataud is an exhaustive model of scientific archaeology for its day. For details, see Edgar J. Driscoll, “Obituary,” *Boston Sunday Globe*, May 31, 1987, and William White Howells, *Hallam Movius Jr., 1907–1987* (Cambridge, MA: Harvard University, Peabody Museum, 1988).

18. Marshack to Abelson, July 20, 1964, and July 28, 1964, Marshack Papers.

19. Movius to Mary C. Ritter, November 13, 1964, Movius Papers, Peabody Museum Archives, Harvard University, 998-27-40/14628.2. Hereafter cited as Movius Papers; other quotations from Movius’s correspondence are also given by date.

20. Marshack, *Roots*, 16–18.

21. Alexander Marshack, “Lunar Notations on Upper Paleolithic Remains,” *Science* 146 (November 1964), 743–55. Abelson accepted it for consideration on September 8 under the title “The Solution of One Aspect of Upper Paleolithic Notation” (Abelson to Marshack, September 8, 1964, Marshack Papers). Hawkins was the first reviewer for *Science* and he recommended to Abelson that either Movius or Otto Neugebauer, an authority on early calendrics at Brown University with whom Marshack had been in correspondence, be the second reviewer (Hawkins to Marshack, July 24, 1964; and Marshack to Neugebauer, July 27, 1964, Marshack Papers).

22. Marshack to Movius, November 1, 1967, Marshack Papers.

23. Movius later told Lita Osmundsen of the Wenner-Gren Foundation that Marshack’s work was “highly meritorious,” which was the highest ranking possible within the categories the Foundation used to evaluate applications (Movius to Osmundsen, December 16, 1969, Movius Papers). Osmundsen agreed with Movius that Marshack should be supported, even though at the time he lacked any academic institutional affiliation, so that awarding him a grant would contravene Foundation rules (Marshack to Hawkins, October 19, 1964, Marshack Papers). The

distinguished anthropologist Mary Douglas later wrote: “The foundation was to look not for great names but for ‘very good mavericks,’ scholars who fell between existing categories as fashionably defined”; Douglas, “Lita Osmundsen and the Wenner-Gren Foundation: An Appreciation,” *Current Anthropology* 27, no. 5 (1986): 523. That description certainly fits Marshack. A few years later Movius turned Marshack into a research associate and was able to support him indirectly by way of the Peabody Museum, which was the official recipient of funds from various granting agencies. Marshack was made a fellow of Harvard and of the Peabody in the spring of 1970, though without funds or a salary. “Ah, well, one doesn’t win them all,” he remarked to Gerald Hawkins (Marshack to Hawkins, April 3, 1970, Marshack Papers).

24. They included Annette Laming-Emperaire and André Leroi-Gourhan (January 6, 1965); René Joffroy (January 20, 1965), and several others (see Movius to Marshack, February 24, 1965, Movius Papers).

25. Marshack, *Roots*, 25.

26. One might also argue that animals have time-factoring capabilities. This is why, for example, dogs welcome home familiars who have been absent and occasionally develop characteristic behaviors to “say good-bye” when a familiar leaves. See Frans de Waal, *Are We Smart Enough to Know How Smart Animals Are?* (New York: Norton, 2016), 2, 33.

27. Marshack, *Roots*, 39.

28. He used the term this way in Marshack, *Roots*, 105.

29. Marshack to Glyn Daniel, January 22, 1972, Marshack Papers.

30. Marshack to Colin Renfrew, May 22, 1971; Marshack to Jimmy McNeil, May 4, 1975, Marshack Papers.

31. Marshack, *Roots*, 28, 31, 53.

32. Marshack to Svirsky, April 1, 1964, Marshack Papers. See also Judy Robinson, “Not Counting on Marshack: A Reassessment of the Work of Alexander Marshack on Notation in the Upper Paleolithic,” *Journal of Mediterranean Studies* 2, no. 1 (1992): 1–17.

33. Marshack to Hawkins, June 14, 1964, Marshack Papers. The date indicated that the “book” to which he referred was the initial manuscript that was based on secondary sources and that remained unpublished. No record of it exists in the Marshack Papers.

34. Hawkins to Marshack, June 16, 1964, Marshack Papers.

35. Marshack to *Scientific American*, June 26, 1972, Marshack Papers. Marshack used the term “phenomenological” in the commonsensical meaning of “accounting for appearance” and not in the philosophically technical sense of Husserl and his followers.

36. Marshack to Scarre, May 4, 1995, Marshack Papers.

37. Marshack, *Roots*, 38.

38. Ibid., 36.

39. Marshack to Movius, June 2, 1965, Movius Papers.

40. Marshack, *Roots*, 49. He made a later comparison of the Rosetta

stone to a Spanish artifact, the baton from Cueto de la Mina, with more justification.

41. Movius to Marshack, August 14, 1967, Movius Papers. The letter referred to by Movius contained sketches of museum pieces with colors to show scratches on statues made with different points.

42. Clark to Marshack, December 9, 1968, Marshack Papers. Clark was Disney Professor of Archaeology at Cambridge and Master of Peterhouse.

43. See, for example, Marshack to Michel Lorblanchet (May 1, 1986, Marshack Papers), where he brought up the issue explicitly for Lorblanchet's consideration.

44. Marshack to Otto Neugebauer, June 27, 1964, Marshack Papers.

45. Marshack to Margaret Conkey, July 17, 1981, Marshack Papers.

46. See Marshack to Movius, October 27, 1964, Movius Papers.

47. Alexander Marshack, "A First Report on Research on Upper Paleolithic Markings and Sequences Conducted in France," March 4, 1965. A copy is in the Marshack Papers, 2005.16.1.25.

48. Ibid., 3.

49. The microscope seems to have been a portable geologist's microscope, which at one point Marshack called a "toy microscope." It was soon replaced with a variable power spectroscopic microscope.

50. Marshack to M. Brézillon, Ministry of Culture, Paris, February 19, 1984, Marshack Papers. This equipment was also used by American researchers. See D. H. Thomas, *The Archaeology of Monitor Valley: 2 Gatecliff Shelter*, Vol. 59, Pt. 1 (New York: Anthropological Papers of the American Museum of Natural History, 1983), chap. 11, 246–78.

51. Marshack to Movius, March 2, 1965, Movius Papers.

52. Joffroy to Marshack, February 12, 1965; and Marshack to Joffroy, February 13, 1965, Marshack Papers. Marshack wrote Joffroy again on February 23 but received no reply. Presumably he continued to use the flash.

53. Movius to Marshack, March 5, 1965, Movius Papers.

54. Marshack to Movius, May 2, 1965, Marshack Papers.

55. Movius to Marshack, May 18, 1965, Marshack Papers.

56. Joffroy to Marshack, May 3, 1965, Marshack Papers.

57. Marshack to Movius, May 23, 1965, Movius Papers; Movius to Marshack, June 1, 1965, Movius Papers.

58. *Notations* was published as Mémoire No. 8 of the Institut de Préhistoire de l'Université de Bordeaux (Bordeaux: Imprimeries Delmas, 1970) with a preface by Movius. It was translated by J.-M. Le Tensorer and edited by F. Bordes and D. de Sonneville-Bordes. Bordes and his wife were friends of Movius. As is often true with the publication of a major scientific monograph, Marshack was impatient for his book to appear. The date of publication was 1970 though the Dépôt Légal was the first trimester of 1971. Additional bibliographic information can be found in Marshack's "Reply" to critics of Marshack, "Cognitive Aspects of Upper Paleolithic Engraving," *Current Anthropology* 13, no. 3/4 (1972): 474. We

discuss this paper in chapter 4.

59. Movius, preface to Marshack, *Notation*, vii–viii.

60. Marshack, *Notation*, 59.

61. Ibid., 115.

62. Movius, "preface," viii.

63. Ibid.

64. Ibid., 117–18.

65. Ibid., 120.

66. Andrée Rosenfeld, review of *Notation dans les gravures du paléolithique supérieur* by Alexander Marshack, *Antiquity* 45 (1971): 317–19.

67. Marshack, *Notation*, 5–6.

68. Nor, of course, was Hawkins's understanding of Stonehenge as a device for predicting eclipses readily accepted (or even seriously examined) by many mainstream archaeologists.

69. Alexander Marshack, "Paleolithic Notation: Marshack and Rosenfeld," *Antiquity* 46 (1972): 63–65.

70. Andrée Rosenfeld, "The Examination of Some Use Marks on Some Magdalenian End Scrapers," in G. de G. Sieveking, ed., *Prehistoric and Roman Studies Commemorating the Opening of Prehistoric and Romano-British Antiquities* (London: British Museum, 1972), 182.

71. Movius to Marshack, February 3, 1972, Movius Papers.

72. Alexander Marshack, "New Techniques in the Analysis and Interpretation of Mesolithic Notation and Symbolic Art," in *Symposium International de l'Art Préhistorique*, ed. Emmanuel Anati (Capo di Ponte: Editioni del Centro, 1970), 480.

73. Ibid., 488–91.

74. Ibid., 494.

75. Marshack to Movius, September 30, 1968, Marshack Papers. In May 1968, Marshack sent Joseph V. Stewart, an archaeologist at Berkeley, two of König's papers on the cosmological significance of Upper Paleolithic art: Marie König, "Zur geistige Situation des Jungpäleolithikers," *Psychologische Beitrage* 3 (1957): 476–77, and König, "Die Symbolik des Urgeschlichen Menschen," *Symbolion* 5 (1966): 121–28. He explained to Stewart that his notational technique was not the same as König's, but that nevertheless notations could be "built" from "unit symbols" into sequential groups that were usually lunar but could also be used "in a non-lunar context on the cave walls." That is, Marshack thought his notational studies were not incompatible with König's argument, notwithstanding her "romanticism."

76. Movius to Marshack, October 7, 1968, and November 18, 1968, Movius Papers.

77. Marshack, "Polesini: A Reexamination of the Engraved Upper Paleolithic Mobiliary Materials of Italy by a New Methodology," *Revista di Scienze preistoriche* 24 (1969): 219–81. Page references are in parentheses in the text. This paper was completed after *Roots* was finished. Marshack, "Response to King," *American Anthropologist* 76, no. 4

(1974): 846.

78. Marshack, "Upper Paleolithic Objects in the British Museum: A Comparative Analysis of Two Fragments by New Methods," in Sieveking, ed., *Prehistoric and Roman Studies*, 140.

79. Marshack, "The Baton of Montgaudier," *Natural History* 79 (1970): 56–73. A French version, "Le Bâton de Commandement de Montgaudier (Charente): Réexamen au Microscope et Interprétation Nouvelle," *L'Anthropologie* 74, no. 5-6 (1970): 321–52, is a more comprehensive analysis that also included discussion of two other artifacts: the La Vache (Ariège) "dagger" and another from Cueto de la Mina (Spain). They are also all discussed in *Roots of Civilization*. Montgaudier baton: https://www.researchgate.net/profile/Tony_Brown/publication/320214751/figure/fig2/AS:547511904944128@1507548418526/Engraving-on-a-baton-de-commandement-from-Grotte-de-Montgaudier-from-de-Nadaillac-1887.png.

80. The version in *Roots*, 173, returned to the possibility that the storied images of the animals "represented the birth of the 'new year' if not calendrically and arithmetically at least observationally and probably in story." On the migratory habits of Atlantic salmon, see A. G. Valiente, F. Juanes, and E. Garcia-Vazquez, "Increasing Regional Temperatures Associated with Delays in Atlantic Salmon Sea-Run Timing at the Southern Edge of European Distribution," *Transactions of the American Fisheries Society* 140 (2011): 367–73; P. Turrero, J. L. Horreo, and E. Garcia-Vazquez, "Same Old *Salmo*? Changes in Life History and Demographic Trends of North Iberian Salmonids since the Upper Paleolithic as Revealed by Archaeological Remains and BEAST Analyses," *Molecular Ecology* 21 (2012): 2318–29; Pablo Turrero, "Chronological Changes in Upper Paleolithic Fisheries Revealed by Museum Archival Material," *Palaios* 28 (2013): 228–32.

81. Marshack, "The Baton of Montgaudier," 59.

82. Marshack, *Notation*, 115.

83. Marshack, "Response to King," *American Anthropologist* 76, no. 4 (1974): 845–47.

84. Marshack, *Roots*, 18.

85. Marshack, "Response to King," 845.

86. Ibid., 846.

87. Marshack, *Roots*, 18.

88. Marshack to Movius, March 31, 1969, Movius Papers.

89. Marshack to Movius, May 26, 1970, Movius Papers.

90. Marshack, *Roots*, 109.

91. Ibid., 113. Marshack discovered several of the attributes of fire we discussed in chapter 1 that were reiterated by later writers.

92. Ibid., 118–19.

93. Ibid., 125, 136.

94. Ibid., 212.

95. Ibid., 216.

96. Quoted in Tomkins, “A Reporter at Large,” 127.
97. Marshack, *Roots*, 197.
98. Lascaux “Chinese” horses: https://s.yimg.com/ny/api/res/1.2/4GpZgpzrWlL2PMi_PgoLlA--~A/YXBwaWQ9aGlnaGxhbmRlcjtzbT0xO3c9NjQwO2g9NDI2/ http://media.zenfs.com/en-GB/homerun/international_business_times_news_7/996d99c060cc8595dd089d1e7d7e6049.
99. Vogelherd horse: https://www.sciencesource.com/Doc/TR1_WATERMARKED/b/0/5/e/SS2677895.jpg?d63644021282.
100. Marshack, *Roots*, 260–61.
101. Ibid., 275–77.
102. Ibid., 282.
103. Ibid., 321–22.
104. I prefer “Indians” since (1) it includes aboriginal peoples living north of 49°N, and (2) most Native Americans and Canadian First Nations refer to themselves as “Indians”—as my great-grandmother did.
105. Ibid., 340.
106. Ibid., 374.

Chapter 4

1. Alexander Marshack, “Cognitive Aspects of Upper Paleolithic Engraving,” *Current Anthropology* 13 (1972): 445–77. The discussion continued two years later; see Mary Aiken Littauer and F. D. McCarthy, “On Upper Paleolithic Engraving,” *Current Anthropology* 15 (1974): 327–28, and Marshack’s “Reply,” 328–32. This practice of publishing disagreement and discussion was later followed by other archaeology journals, such as *Rock Art Research* and the *Cambridge Archaeological Journal*. The former is as interested as *Current Anthropology* in publishing dissent; the second rather less so.
2. Marshack, “Reading before Writing,” *New York Sunday Times Book Review*, April 6, 1986, 40.
3. Marshack, “Reply,” *Current Anthropology* 15 (1974): 329.
4. The distinction among syntax, semantics, and pragmatics was borrowed from the semiotic and linguistic theory of Ferdinand de Saussure. As Michel Lorblanchet and Paul Bahn puckishly observed, “Just as Molière’s Monsieur Jourdain was speaking prose without knowing it, we are probably doing ‘semiotics’ without wishing to (and Monsieur Erectus probably did so too!)”; Lorblanchet and Bahn, *The First Artists: In Search of the World’s Oldest Art* (London: Thames and Hudson, 2017), 133.
5. Alexander Marshack, “Upper Paleolithic Notation and Symbol,” *Science* 178, no. 4063 (1972): 817–28. Marshack identified this article as a correction in his “Response” to King’s review in *American Anthropologist* 76 (1974): 846.
6. Alexander Marshack, *The Roots of Civilization* (New York: McGraw-Hill, 1972), 192–97; see also Marshack, “Upper Paleolithic Notation,”

828n15.

7. Alexander Marshack, "Aq Kupruk: Art and Symbol," in *Transactions of the American Philosophical Society: Prehistoric Research in Afghanistan (1959-1966)*, ed. Louis Dupree (Philadelphia: American Philosophical Society, 1972), 66–72. These artifacts later disappeared, having been looted from the Kabul Museum.

8. Alexander Marshack, "The Chamula Calendar Board: An Internal and Comparative Analysis," in *Mesoamerican Archaeology: Proceedings of a Symposium on Mesoamerican Archaeology held by the University of Cambridge Centre of Latin American Studies, August 1972*, ed. Norman Hammond (London: Duckworth, 1974), 255–70.

9. Ibid., 255.

10. Alexander Marshack, "Öküzini: The Complexity and Variation of the Symbolic Imagery," in *La Grotte d'Öküzini: Evolution du Paléolithique final du Sud-Ouest de l'Anatolie*, ed. Isin Yakinkaya, Marcel Otte, Januz Kozlowski, and Ofer Bar-Yosef (Liège: Université de Liège, 2002), 305–6.

11. Marshack, "The Chamula Calendar Board," 369. On his contribution, Gossen said nothing about a "challenge," though he did refer to Marshack's paper; Gossen "A Chamula Solar Calendar Board from Chiapas, Mexico," in Hammond, ed., *Mesoamerican Archaeology*, 228.

12. Alexander Marshack, "Olmec Mosaic Pendant," in *Archaeoastronomy in Pre-Colombian America*, ed. Anthony F. Aveni (Austin: University of Texas Press, 1975), 370–71.

13. Ibid., 373–75.

14. Alexander Marshack, "A Lunar-Solar Year Calendar Stick from North America," *American Antiquity* 50 (1985): 27–51.

15. Ibid., 51n4.

16. Alexander Marshack, "The Taï Plaque and Calendrical Notation in the Upper Paleolithic," *Cambridge Archaeological Journal* 1 (1991): 25–61. See also Marshack, "Correct Data Base: Wrong Model?," *Behavioral and Brain Science* 16 (1993): 767–68.

17. L.-E. Brochier and J.-L. Brochier, "L'Art mobilier de deux nouveaux Gisements magdaléniens à Saint-Nazaire-en-Royans (Drôme)," *Etudes préhistoriques* 4 (1973): 1–12. On Bordes, see Paul Pettitt, "François Bordes," in *Great Prehistorians: 150 Years of Paleolithic Research, 1859–2009*, ed. R. Hosfield, F. Wenban-Smith, and M. Popevol; this also appeared in *Lithics: The Journal of the Lithic Studies Society* 30 (2009): 201–12. Taï plaque: https://www.researchgate.net/profile/Karenleigh_A_Overmann/publication/301221553/figure/fig10/AS:639266971451395@1529424531915/a-Plaque-from-Grotte-du-Tai-c-14-KYA-The-marks-may-represent-quantification-Coolidge.png.

18. Alexander Marshack, "Analyse préliminaire d'une Gravure à système de Notation de la Grotte du Taï (Drôme)," *Etudes préhistoriques* 4 (1973): 13–16.

19. Marshack, "The Taï Plaque," 27.

20. The term comes from the Greek, meaning "turning in the manner

of an ox" engaged in plowing a field. Many Greek inscriptions are written boustrophedonically, with one line reading from left to right and the next from right to left with the letters reversed; see Leslie Threattie, *The Grammar of Attic Inscriptions* (Berlin: Walter de Gruyter, 1980), 54–55. Marshack evidently used the term analogically. The boustrophedon pattern was a significant innovation precisely because it could be adopted to linguistic contents.

21. Marshack made this argument more forcefully later, in Alexander Marshack, "Space and Time in Preagricultural Europe and the Near East: The Evidence for Early Structural Complexity," in *Urbanization and Land Ownership in the Ancient Near East*, ed. Michael Hudson and Baruch A. Levine (Cambridge, MA: Peabody Museum of Archaeology and Ethnology, Harvard University, 1999), 2:19–63.

22. Marshack, "The Taï Plaque," 60.

23. Marshack also undertook microscopic analysis of decorated and carved artifacts from Maszycka in Alexander Marshack, "Maszycka Iconography: A Study of the Dispersed Symbol Systems of the Magdalénien à Navettes," *Jahrbuch des Römische-Germanische Zentralmuseums* 40, no. 1 (1993): 205–16, and in Marshack, "The Berekhat Ram Figurine: A Late Acheulian Carving from the Middle East," *Antiquity* 71 (1972): 327–37. We discuss this artifact in a later section of this chapter.

24. Alexander Marshack, "The Female Image: A 'Time-Factored Symbol,' A Study in Style and Aspects of Image Use in the Upper Paleolithic," in *Proceedings of the Prehistoric Society* 57, no. 1 (1991): 17–31; this article also appeared in *Essays in Paleolithic Art* (1991): 29.

25. Alexander Marshack, "Cognitive Aspects of Upper Paleolithic Engraving," *Current Anthropology* 13 (1972): 445–77. Additional comments were published in *Current Anthropology* 15 (1974): 327–32.

26. Marshack, "The Female Image," 18.

27. Marshack, "Cognitive Aspects," 447, 456.

28. Ibid., 455–57.

29. Ibid., 455.

30. Ibid., 457.

31. Movius wrote to Marshack that the first version of the section on cognitive implications "left me completely breathless—I was unable to follow your argument. For this reason, I strongly advise you to rewrite this entire section clarifying your ideas and expressing them in a much more direct and simplified manner. In short, it seems to me that you became absolutely drunk with words" (Movius to Marshack, April, 7, 1970, Marshack Papers). Marshack did rewrite the (to Movius) offending section and removed some of his more extravagant (and unsubstantiated) speculations. The sources for Marshack's discussion of brain physiology, Norman Geschwind and Aleksandr Lauria, were not mentioned in *Roots*, which probably indicated that Marshack adopted their views after *Roots* was with the publisher and without much serious reflection. In his response, he stressed that Geschwind's findings were "tentative" and

Lauria "postulates structures and processes that are at times too simple" ("Cognitive Aspects," 473). According to Elena A. Okladnikova, Marshack met Lauria in Moscow in 1976; Okladnikova, "Chasing Thoughts Lost Thirty Millennia Ago," in *An Enquiring Mind: Studies in Honor of Alexander Marshack*, ed. Paul G. Bahn (Cambridge: Peabody Museum, Harvard University Press, 2009), 211.

32. Marshack, "Cognitive Aspects," 461.

33. Ibid., 457. As he said with respect to the Winnebago calendar stick, "one can theoretically derive the Winnebago calendar from prehistoric Eurasian traditions, one could not from San or Australian aboriginal traditions" (Marshack, "A Lunar-Solar Year Calendar Stick," 45).

34. Movius, "Comments," 468–69.

35. Marshack, "Cognitive Aspects," 470. In the second set of critical responses, F. D. McCarthy made some comparisons between Upper Paleolithic symbols and those of Australian Aborigines. Marshack replied that they may "look" the same but are "analytically quite distinct"; Marshack, "On Upper Paleolithic Engraving," *Current Anthropology* 15 (1974): 327–32.

36. Marshack, "Cognitive Aspects," 472.

37. Marshack, "Upper Paleolithic Symbol Systems of the Russian Plain: Cognitive and Comparative Analysis," *Current Anthropology* 20 (1979): 271–311. The research was undertaken in 1976–77 and accepted for publication in May 1978. Marshack used the term "symbol systems" where other archaeologists spoke of "symbolling" or "symbolization." These effectively cognate terms can occasionally be used to establish recondite distinctions, but generally speaking Marshack included as "symbolic" all human productions that express culturally contextual meanings beyond the utilitarian (see Marshack, "Upper Paleolithic Symbol Systems," 308).

38. Marshack, "Upper Paleolithic Symbol Systems," 293.

39. Ibid., 294.

40. Vogelherd horse: https://www.sciencesource.com/Doc/TR1_WATERMARKED/b/0/5/e/SS2677895.jpg?d63644021282.

41. Alexander Marshack, *Hierarchical Evolution of the Human Capacity: The Paleolithic Evidence* (New York: American Museum of Natural History, 1985), 8.

42. Alexander Marshack, "Some Implications of the Paleolithic Symbolic Evidence for the Origin of Language," *Current Anthropology* 17 (1976): 274–82; also appeared in *American Scientist* 64 (1976): 136–45, and it was originally presented to the New York Academy of Sciences in September 1975.

43. Alexander Marshack, "The Origin of Language: An Anthropological Approach," in *Language Origin: A Multidisciplinary Approach*, ed. J. Wind et al. (Dordrecht: Kluwer Academic, 1991), 435–36. See also Marshack, "Evolution of the Human Capacity: The Symbolic Evidence," *Yearbook of Physical Anthropology* 32 (1989): 3–4, and

Marshack, "The Neanderthals and the Human Capacity for Symbolic Thought: Cognitive and Problem-Solving Aspects of Mousterian Symbols," in *L'Homme de Néandertal, Actes du Colloque International*, Vol. 5, *La Penseé*, ed. M. Otte (Liège: University of Liège, 1988), 69.

44. The problem also recurred in later studies, especially after the discovery and dating of Chauvet cave, because it was unavoidable. See, for example, Michel Lorblanchet and Paul Bahn, *The First Artists: In Search of the World's Oldest Art* (London: Thames and Hudson, 2017). We discuss this problem in chapter 7.

45. Alexander Marshack, "Exploring the Mind of Ice-Age Man," *National Geographic* 183, no. 1 (1975): 76.

46. Michel Lorblanchet, *La Naissance de l'Art: Genèse de l'Art Préhistorique dans le Monde* (Paris: Errance, 1999), 451.

47. Alexander Marshack, "The Meander as a System: The Analysis and Recognition of Iconographic Units in Upper Paleolithic Compositions," in *Form in Indigenous Art: Schematisation in the Art of Aboriginal Australia and Prehistoric Europe*, ed. Peter J. Ucko (Canberra: Australian Institute of Aboriginal Studies, 1977), 287. See also Marshack, "Use versus Style in the Analysis and Interpretation of Upper Paleolithic Image and Symbol," in *Les Courants stylistiques dans l'Art mobilier au Paléolithique Supérieur* (Nice: Colloque XIV, IX Congrès, UISPP, 1976), 118–46.

48. Marshack, "The Meander," 300.

49. Ibid., 312.

50. Ibid., 316.

51. Marshack, "Exploring the Mind of Ice-Age Man," 88. See also the application of Marshack's method by Kevin Sharpe and Leslie VanGelder, "The Study of Finger Flutings," *Cambridge Archaeological Journal* 16 (2006): 281–95, and Sharpe and VanGelder, "Finger Flutings in Chamber A1 of Rouffignac Cave, France," *Rock Art Research* 23 (2006): 179–98. See also Robert G. Bednarik, "Parietal Finger Markings in Europe and Australia," *Rock Art Research* 3 (1986): 30–61; Francesco d'Errico, "Technology, Motion, and the Meaning of Epipaleolithic Art," *Current Anthropology* 33 (1992): 94–109; Michel Lorblanchet, "Finger Markings in Pech Merle and Their Place in Prehistoric Art," in *Rock Art in the Old World*, ed. Michel Lorblanchet (New Delhi: Indira Gandhi National Centre for the Arts, 1992), 451–90.

52. Chris Stringer and Clive Gamble, *In Search of the Neanderthals: Solving the Puzzle of Human Origins* (New York: Thames and Hudson, 1993).

53. See Svante Pääbo, *Neanderthal Man: In Search of Lost Genomes* (New York: Basic Books, 2014).

54. See Leon Henri-Martin, "Présentations d'Ossements utilisés de l'Époque moustérien," *Bulletin de la Société Préhistorique française* 4 (1907): 269–77, and Henri-Martin, *Recherches sur l'Evolution du Moustérien dans le Gisement de la Quina (Charente): Troisième Fascicule: Industrie osseuse* (Paris: Schleicher Frères, 1910).

55. Marshack, “Some Implications,” 276–77.

56. Marshack, “The Neanderthals and the Human Capacity for Symbolic Thought,” 67.

57. See Denis Peyrony and Louis Capitan, “Découverte d’un sixième Squelette moustérien à la Ferrassie (Dordogne),” *Revue d’Anthropologie* 31 (1921): 382–88.

58. Marshack, “Evolution of the Human Capacity,” 19–21; Lorblanchet and Bahn, *The First Artists*, 207–8.

59. H. P. Schwarcz and I. Skoflek, “New Dates for the Tata, Hungary Archaeological Site,” *Nature* 295 (February 1982): 590–91; cf. Marie-Hélène Moncel, “Tata (Hongrie): Un Assemblage microlithique du Début du Pléistocène supérieur en Europe Centrale,” *L’Anthropologie* 107 (2003): 117–51.

60. Alexander Marshack, “Early Hominid Symbols and the Evolution of the Human Capacity,” in *The Emergence of Modern Humans: An Archaeological Perspective*, ed. Paul Mellars (Ithaca, NY: Cornell University Press, 1990), 488–89. See also Marshack, “La Pensée Symbolique et l’Art,” *Dossiers d’Histoire et d’Archéologie* 124 (1988): 80–90.

61. Marshack, “Some Implications,” 279.

62. Marshack, “The Neanderthals and the Human Capacity for Symbolic Thought,” 71.

63. Marshack, “Some Implications,” 280; Marshack, “The Neanderthals and the Human Capacity for Symbolic Thought,” 76–78. Marshack made these arguments prior to the discovery of a Neanderthal hyoid bone or of any genetic evidence that Neanderthals shared the FOXP2 gene with Sapiens. See B. Arensberg et al., “A Middle Paleolithic Hyoid Bone,” *Nature* 338 (April 1989): 758–60; J. Krause et al., “The Derived FOXP2 Variant of Modern Humans Was Shared with Neanderthals,” *Current Biology* 17 (2007): 1908–12.

64. See A. J. Jelinek, A. Debénath, and H. L. Dibble, “A Preliminary Report on Evidence Related to the Interpretation of Economic and Social Activities of Neanderthals at the Site of La Quina (Charente), France,” in *L’Homme de Neandertal*, Vol. 6, *La Subsistance*, ed. M. Patou and L. G. Freeman (Liège: Service de Préhistoire, Université de Liège, 1989), 102. See also Thomas F. Kehoe, “The Case for an Ethnographic Approach to Understanding the European Paleolithic,” in *Spuren der Jagd—Die Jagd nach Spuren: Festschrift für Hansjürgen Müller-Beck*, ed. Ingo Campen, Joachim Hahn, and Margarethe Ürpmann (Tübingen: Mo Vince Verlag, 1996), 193–202.

65. Marshack, “Evolution of the Human Capacity,” 1–2.

66. Ibid., 2, 4.

67. Marshack, “Some Implications,” 280.

68. Marshack, “The Ecology and Brain of Two-handed Bipedalism: An Analytic, Cognitive, and Evolutionary Assessment,” in *Animal Cognition: Proceedings of the Harry Frank Guggenheim Conference, June 2–4, 1982*, ed. H. L. Roitblat et al. (Hillsdale, NJ: Lawrence Erlbaum, 1984), 491–511.

Marshack did not say what he meant by "heuristic," but his usage conformed to mid-century philosophy of science whereby it was not an hypothesis to be verified or falsified but an assumption to be tested in various other ways. See Arthur Pap, *An Introduction to Philosophy of Science* (London: Eyre and Spottiswood, 1963), 351; Bernard Lonergan, *Insight: A Study of Human Understanding* (New York: Longmans, 1958), 461.

69. Marshack, "The Ecology and the Brain," 491. To see his originality, compare Marshack's argument with one of conventional anthropology, such as C. Owen Lovejoy, "The Origin of Man," *Science* 221, no. 4480 (1981): 341–50. Marshack's argument was quite similar to that of Tim Ingold, which we discussed in chapter 1.

70. Marshack, "The Ecology and Brain," 496–97.

71. Ibid., 502.

72. Ibid., 505, 509.

73. See Henri de Lumley, "Les Fouilles de Terra Amata: Premiers Résultats," *Bulletin du Musée d'Anthropologie et Préhistoire de Monaco* 13 (1966): 29–51. This site dates from approximately 380 KYA. See also Alexander Marshack "Commentary on Parker and Gibson, 'Evolution of Language and Intelligence,'" *Behavioral and Brain Sciences* 2 (1979): 395; and Marshack, "On Paleolithic Ochre and the Early Uses of Color and Symbol," *Current Anthropology* 22 (1981): 188–91; François Bordes, "Os percé moustérien et Os gravé acheuléen du Pech de l'Azé," *Quaternaria* 2 (1969): 1–6; and Ernst E. Wreschner et al., "Red Ochre and Human Evolution: A Case for Discussion," *Current Anthropology* 21 (1980): 631–44.

74. Marshack, *Hierarchical Evolution*, 23–24.

75. Stephen Jay Gould and Elisabeth S. Vrba, "Exaptation: a Missing Term in the Science of Form," *Paleobiology* 8 (1982): 4–15.

76. In 1976, for example, Marshack wrote: "The sense one gets from these data and interpretations [of Mousterian materials] is of a struggling, seminal, almost mute awareness of death and a kind of incipient protosymbolization" (Marshack, "Some Implications," 276). As late as 1991 he discussed "incipiences," "primate linguistic incipience," and "incipience or pre-adaptation" (Marshack "The Origin of Language," 425–28).

77. Alexander Marshack, "The Species-Specific Evolution and Contexts of the Creative Mind: Thinking in Time," *Journal of Social and Biological Science* 2 (1988): 117–19.

78. Marshack, "The Neanderthals and the Human Capacity for Symbolic Thought," 58–59.

79. Marshack, "The Species-Specific Evolution and Contexts of the Creative Mind: Thinking in Time," in *The Creative Mind*, ed. C. Scorr Findlay and Charles J. Lumsden (London: Academic Press, 1988), 117–19.

80. Marshack, *The Roots of Civilization*, rev. and expanded (Mt. Kisco, NY: Moyer Bell, 1991).

81. Marshack to Chris D. Knight, January 27, 1992, Marshack Papers.
82. Marshack, *Roots* (1991), 408.
83. Ibid., 409.
84. Marshack, "Early Hominid Symbol and Evolution of the Human Capacity," in Mellars, ed., *Emergence of Modern Humans*, 459.
85. Marshack, "Evolution of the Human Capacity," 4, 24.
86. Marshack, "The Origin of Language," 441–43.
87. Marshack, "Paleolithic Image Making," 54.
88. Marshack, *Roots* (1991), 409.
89. Ibid., 409.
90. Marshack, "The Origin of Language," 441.
91. Marshack, "Space and Time in Preagricultural Europe," 24–25.
92. Marshack, *Hierarchical Evolution of the Human Capacity*, 15, 46.
93. Ann Sieveking, "Review," *Antiquity* 46 (1972): 329–30.
94. Arden R. King, "Review," *American Anthropologist* 75 (1973): 1897–1900. Similarly, Whitney Davis criticized Marshack's use of the term "notation," but he added that "unfortunately, we do not have a good descriptive term for such systems"; Davis, "The Origins of Image-Making," *Current Anthropology* 27 (1986): 197.
95. Marshack, "Response to King," *American Anthropologist* 76 (1974): 245–47.
96. Ian Dawson, "Review," *American Anthropologist* 95 (1993): 1027–28.
97. In what was supposed to be a focused critique of a Marshack paper, David R. Moore of the Australian Museum told an amusing or dismissive anecdote regarding a 1974 visit by Marshack, stressing "his enthusiasm and excitement" but dismissing the results. Moore added that the story "is not intended to detract in any way from Marshack's remarkable achievement," though that achievement was not, properly speaking, science. *Roots*, he said, was "one of my favourite books for browsing, primarily because the fascinating play of Marshack's imagination in the text is a stimulus to one's own imagination, but no less for the delights provided by his magnificent photographs and line drawings." Faint praise indeed! See Moore "Comment" to Marshack's "Theoretical Concepts That Lead to New Analytic Methods, Modes of Inquiry and Classes of Data," *Rock Art Research* 2 (1985): 109.
98. In Annette Laming-Emperaire, "Compte rendu [of *Roots*]," *Annales: Histoire, Sciences Sociales* 28 (1973): 1316–17.
99. Baity to Marshack, April 20, 1972, Marshack Papers.
100. See Movius to Marshack, October 29, 1973; John B. Cornell [NSF] to Marshack, May 31, 1973. Marshack received NSF funding a few years later. Marshack to Movius, May 19, 1976; all in Movius Papers.
101. See the interesting account by Lawrence H. Keeley, *War before Civilization: The Myth of the Peaceful Savage* (New York: Oxford University Press, 1996), vii–x. See also Napoleon A. Chagnon, *Noble Savages: My Life among Two Dangerous Tribes: The Yanomamö and the Anthropologists* (New York: Simon and Schuster, 2013).

102. Movius to Mary C. Ritter, November 13, 1964, Movius Papers.
103. Movius to Kress Foundation, April 9, 1970, Movius Papers.
104. Marshack to Roland Berg, May 16, 1970, Marshack Papers.
105. Movius to Marshack, February 1, 1968, Marshack Papers.
106. Marshack to Calvin Tomkins, April 16, 1973, Marshack Papers.
107. Le Roy McDermott, "Self-Representation in Upper Paleolithic Female Figurines," *Current Anthropology* 37, no. 2 (1996): 227–75.
108. By "Eurocentric" Marshack meant that any particular investigation was a result of the historical development of archaeology in Europe; see Alexander Marshack, "The Origin of Image-Making," *Current Anthropology* 27 (1986): 193–215. This is essentially the point made in their now classic (but initially controversial) article: S. McBrearty and A. S. Brooks, "The Revolution That Wasn't: A New Interpretation of Modern Human Behavior," *Journal of Human Evolution* 39 (2000): 453–63.
109. Marshack made his critical comments in an offhand way many times over the years in several of his papers. He did so in a more focused way in the second edition of *Roots* and in several other places; see *Roots* (1991), 406 (Lewis-Williams); 401–3 (Meg Conkey); 398 (Leroi-Gourhan); and Alexander Marshack, "The Analytical Problems of Subjectivity in the Maker and User," in *The Limitations of Archaeological Knowledge*, ed. Jean Clottes and T. Shaw (Liège: University of Liège, 1992), 181–210; Marshack, "Methodology in the Analysis and Interpretation of Upper Paleolithic Image: Theory versus Contextual Analysis," *Rock Art Research* 8 (1991): 47–58. See also Margaret W. Conkey, "A History of European 'Paleolithic Art': Magic, Mythogram, and Metaphor for Modernity," in *Handbook of Human Symbolic Evolution*, ed. Andrew Lock and Charles R. Peters (Oxford: Clarendon, 1996), 306–7; J. D. Lewis-Williams and T. A. Dowson, "Theory and Data: A Brief Critique of A. Marshack's Research Methods and Position on Upper Paleolithic Shamanisms," *Rock Art Research* 6 (1989): 38–50. See also April Nowell and Melanie L. Chang, "Science, the Media, and Interpretations of Upper Paleolithic Figurines," *American Anthropologist* 116 (2014): 562–77.
110. Paul Bahn, "No Sex, Please, We're Aurignacians," *Rock Art Research* 3 (1986): 99–120.
111. Paul Bahn, "Reply," *Rock Art Research* 3 (1986): 117.
112. James Elkins, "On the Impossibility of Close Reading: The Case of Alexander Marshack," *Current Anthropology* 37 (1996): 185–226. Among the commentators were four archaeologists, including Marshack, and ten "humanists" of various kinds.
113. For a contemporary discussion of connoisseurship, which is a kind of skill rather than refined subjectivity, see Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1962).
114. David Carrier, "Comments," *Current Anthropology* 37 (1996): 202.
115. Iain Davidson, "Comments," *Current Anthropology* 37 (1966): 204.
116. See Bahn, *Images of the Ice Age*, 328.
117. Marshack, "Comments," *Current Anthropology* 37 (1996): 214.

118. Roger Lewin, "Ice Age Art Idea Toppled," *Science* 243, no. 4897 (1989): 1435.

119. White began his criticism of Marshack even earlier in a publication that began as a project when he was in graduate school. See Randall White, "The Manipulation of Burins in Incision and Notation," *Canadian Journal of Anthropology* 2 (1982): 129–36, which made several of the same points Lewin reported in *Science*.

120. Randall White, "Rediscovering French Ice-Age Art," *Nature* 320 (April 1986): 683–84.

121. Marshack to Maddox, April 12, 1986, Marshack Papers. See also Marshack's account of the exhibit in Alexander Marshack, "European Ice Age Art and Symbol," *Archaeology* 31 (1978): 52–55. White wrote the catalogue for the 1986 exhibit at the Museum of Natural History, *Dark Caves, Bright Visions*.

122. Marshack to White, April 1, 1986, Marshack Papers.

123. Marshack, "Ice Age Analysis," *Science* 244 (June 1989): 1029.

124. White first made this claim in White, "The Manipulation of Burins," 131, 133.

125. See C. J. Hawkes, E. K. Tratman, and Rosemary Powers, "Decorated Piece of Rib Bone from the Paleolithic Levels at Gough Cave, Cheddar, Somerset," *Proceedings of the University of Bristol Spelaeological Society* 12 (1970): 137–42, for a detailed discussion of inscribing fresh and weathered bone.

126. One of Marshack's colleagues at the Peabody wrote Lewin: "Must *Science* magazine take the approach of *People* magazine or the *National Enquirer*" in exaggerating a criticism into a toppling? (C. C. Lamberg-Karlovsky to Lewin, March 24, 1989, Marshack Papers).

127. Randall White, "Visual Thinking in the Ice Age," *Scientific American* 261 (July 1989): 92–99.

128. Marshack and White, "Letters," *Scientific American* 261 (December 1989): 12–13. Marshack made the same point on several other occasions. See, for example, Alexander Marshack and Balaji Mundkur, "On the Dangers of Serpents in the Mind," *Current Anthropology* 26 (1985): 139–52; Marshack, "More on the Endless Serpent," *Current Anthropology* 27 (1986): 263–65.

129. See, for example, Randall White, review of *The Roots of Civilization*, 2nd ed., *American Antiquity* 59 (1994): 392–93, or his discussion of Marshack's notion of symbolization in White, "Beyond Art: Toward an Understanding of the Origins of Material Representation in Europe," *Annual Review of Anthropology* 21 (1992): 548. On the other side, see Marshack, review of *Prehistoric Art* by Randall White, *Journal of the Royal Anthropological Institute* 11 (2005): 371. On a number of occasions, Marshack criticized other scholars for citing White as an authority on anything; see Marshack, comment on A. Marin Byers, "Symbolling and the Middle-Upper Paleolithic Transition: A Theoretical and Methodological Critique," *Current Anthropology* 35 (1994): 386. Possibly the height of their mutual recrimination came when White

called Marshack's photographs "visual arguments" that used "preferential lighting" to create images that served his "interpretive agenda." Once, as an undergraduate, White said, he was excited and attracted by Marshack's argument. He attributed this youthful attitude to Marshack's "journalistic and photographic skill." But no longer: "In my opinion his anthropological contributions have been much overstated" (White, comment on "The Impossibility of Close Reading," *Current Anthropology*, 37 [1996]: 219–20). Marshack returned the compliment. See Marshack, "On 'Close Reading' and Decoration versus Notation," *Current Anthropology* 38 (1997): 82.

130. Paul Bahn, "Getting into the Groove," *Nature* 339 (June 1989): 429–30.

131. Francesco d'Errico, "Paleolithic Lunar Calendars: A Case of Wishful Thinking?," *Current Anthropology* 30, no. 1 (1989): 117–18. It was accepted for publication on June 29, 1988.

132. Alexander Marshack and Francesco d'Errico, "On Wishful Thinking and Lunar 'Calendars,'" *Current Anthropology* 30 (1989): 491–500.

133. "The strongest claims for prehistoric lunar notations have been made for notches on bone, and it remains to be seen how far d'Errico's results are applicable to these" (Bahn, "Getting into the Groove," 430).

134. Marshack to Jude Robinson, January 13, 1990, Marshack Papers.

135. D'Errico to Marshack, January 12, 1991, Marshack Papers.

136. Francesco d'Errico and Carmen Cacho, "Notation versus Decoration in the Upper Paleolithic: A Case-Study from Tossal de la Roca, Alicante, Spain," *Journal of Archaeological Science* 21 (1994): 185–200. Alexander Marshack, "Methodology and the Search for Notation among Engraved Pebbles of the European Late Paleolithic," *Antiquity* 69 (1995): 1049–51; Marshack and d'Errico, "The La Marche Antler Revisited," *Cambridge Archaeological Journal* 6 (1996): 99–117.

137. Alexander Marshack, "The Berekhat Ram Figurine: A Late Acheulean Carving from the Middle East," *Antiquity* 71 (1972): 327–37; Marshack, "On the 'Geological' Explanation of the Berekhat Ram Figurine," *Current Anthropology* 36 (1995): 495. Francesco d'Errico and April Nowell, "A New Look at the Berekhat Ram Figurine: Implications for the Origins of Symbolism," *Cambridge Archaeological Journal* 10 (2000): 123–67, including Marshack's comments, 152–57.

138. Marshack to Scarre, January 9, 1996, Marshack Papers.

139. "The debates we had were critical for my professional training and I will always remember them, as well as the few opportunities we had to directly exchange our views, among the more stimulating moments of my whole career" (d'Errico to Marshack, May 19, 2004, Marshack Papers). See also the opening remarks in d'Errico, "The Oldest Representation of Childbirth," in Bahn, ed., *An Enquiring Mind*, 99.

140. Bordes, "Os percé moustérien et Os gravé acheuléen du Pech de l'Azé," 1.

141. Marshack, "The Meander as System," 292.

142. D'Errico, comment to R. G. Bednarik, "Concept-mediated Marking in the Lower Paleolithic," *Current Anthropology* 36 (1995): 618–20; and d'Errico and Paola Villa, "Holes and Grooves: The Contribution of Microscopy and Taphonomy to the Problem of Art Origins," *Journal of Human Evolution* 33 (1997): 3, 11–14.

143. Bahn, preface to Bahn, ed., *An Enquiring Mind*, ix.

144. Ian Tattersall, "Evolution and the Human Capacity," in Bahn, ed., *An Enquiring Mind*, 315.

145. Lorblanchet, *La Naissance de l'Art*, 174.

146. Bahn, preface to Bahn, ed., *An Enquiring Mind*, x.

147. See the remarks in Bahn, ed., *An Enquiring Mind*: by Elaine Marshack, "Introduction," 2; John Clegg, "Support for a New Sky Hero from a Conquered Land," 51; and Michael Hudson, "After the Ice Age: How Calendar-Keeping Shaped Early Social Structuring," 151. Despite Marshack's mixed reception by academic archaeologists, he received reams of fan mail in response to his discussion in *Roots* and to his *National Geographic* article. These documents are collected in the Marshack Papers. Some of the letters are decidedly odd.

148. E. C. Krupp, "The Crow, the Cup, and the Water Snake: Celestial Seasonality of Figs and Rain," in Bahn, ed., *An Enquiring Mind*, 155.

149. Calvin Tomkins, "A Reporter at Large: Thinking in Time," *New Yorker*, April 22, 1974, 127.

Chapter 5

1. See Christopher Chippendale, "The Invention of Words for the Idea of 'Prehistory,'" *Proceedings of the Prehistoric Society* 54 (1988): 303–14.

2. Paul G. Bahn, *Images of the Ice Age*, 3rd ed. (Oxford: Oxford University Press, 2016), 7.

3. Ibid., 10.

4. The identical problem arose with the publication of the *History of Mankind*, sponsored by UNESCO. There Leonard Woolley wrote: "In a history of man's cultural progress, any discussion of the fine arts of painting and sculpture might seem to be out of place. A great work of art results from the genius of an individual and may reflect only in a very small degree the conditions of contemporary society; thus the astonishing pictures of Altamira and Lascaux were painted at a time when man's manner of life and his moral and intellectual outlook were those of the primitive savage, and if sculpture were to be accepted as a criterion then a comparison of the 'Venus of Willendorf' with one of the statues of Mr. Henry Moore might lead to the conclusion that for thirty thousand years civilization had been stagnant"; Woolley, *The Beginnings of Civilization*, Vol. 1, Pt. 2 (New York: Harper and Row, 1963), 517–18.

5. See M. A. Garcia Guinea, *Altamira and Other Cantabrian Caves*, trans. Lynne Polak (Madrid: Silex, 1979), 1–51.

6. Herbert Kühn, *On the Track of Prehistoric Man*, trans. Alan

Houghton (New York: Random House, 1955), 45–46. Kühn interviewed Sanz de Sautuola's daughter several years later, and she claimed a vivid memory of the story told below.

7. Other versions of the story have Maria exclaiming "*toros, toros, papa*!" Altamira ceiling: http://kuchka.org/sites/default/files/A-5_Altimira%20Ceiling_Breuil-Gaston_JimCleaned.jpg.

8. Kühn, *On the Track of Prehistoric Man*, 46.

9. Andrew J. Lawson, *Painted Caves: Paleolithic Rock Art in Western Europe* (Oxford: Oxford University Press, 2012), 53.

10. See Paul G. Bahn, "Expecting the Spanish Inquisition: Altamira's Rejection in Its Nineteenth Century Context," in *Ancient Images, Ancient Thought: The Archeology of Ideology*, *Proceedings of the 23rd Chacmool Conference, 1990*, ed. S. Goldsmith (Calgary: University of Calgary Archaeology Association, 1992), 339–46. Mats Rosengren, *Cave Art, Perception and Knowledge* (London: Palgrave Macmillan, 2012), 32, suggested that an additional reason why Altamira was unacceptable to the French was because they were more deeply committed to an "evolutionary" perspective than the Spaniards were. For the latter, the "advanced" imagery of Altamira did not fundamentally challenge their Christianity in the way that it did the beliefs of the French scientists. See also Annette Laming-Emperaire, *Origines de l'Archéologie préhistorique en France* (Paris: Picard, 1964), chap. 10. Bruce G. Trigger added that French (and British) Paleolithic archaeology grew out of geology not nationalist antiquarianism and so provided from the beginning an inherent challenge to biblical chronology; Bruce G. Trigger, *A History of Archaeological Thought*, 2nd ed. (Cambridge: Cambridge University Press, 2009), 137.

11. Edmond Harlé, "La Grotte d'Altamira, près de Santander (Espagne)," *Matériaux* 17 (1882-1883): 275–83.

12. For details, see N. Richard, *Inventer la Préhistoire: Les Débuts de l'Archéologie Préhistorique en France* (Paris: Vuibert, 2008), and Annette Laming-Emperaire, *La Signification de l'Art rupestre paléolithique: Méthodes et Applications* (Paris: Picard, 1962), 39–47.

13. Emile Cartailhac, "Les Cavernes ornées de Dessins: La Grotte d'Altamira, Espagne. 'Mea Culpa d'un Sceptique,'" *L'Anthropologie* 13 (1902): 348–54.

14. See Emile Cartailhac, "Les plus Anciens Artistes de l' Humanité," *Revue des Pyrénées* 20 (1908): 512–13.

15. James R. Sackett, "From Mortillet to Bordes: A Century of French Paleolithic Research," in *Towards A History of Archaeology*, ed. Glyn Daniel (London: Thames and Hudson, 1981), 85–99; Trigger, *A History of Archaeological Thought*, 149–56; Laming-Emperaire, *La Signification*, 69–70.

16. See the review of the early literature by Peter J. Ucko and Andrée Rosenfeld, *Paleolithic Cave Art* (New York: McGraw-Hill, 1967), chap. 1.

17. John Halverson, "Art for Art's Sake in the Paleolithic," *Current Anthropology* 28 (1987): 63–89.

18. Ibid., 65–66.

19. See Henri Bégouën, “Les Bases magiques de l’Art préhistorique,” *Scientia* 65 (April 1939): 209–10, and Laming-Emperaire, *La Signification*, 102.

20. Halverson, “Art for Art’s Sake,” 70, 85.

21. Bahn, “Comment,” 72–73.

22. Johan Huizinga, *Homo Ludens: A Study of the Play Element in Culture* (Boston: Beacon, 1950).

23. Salomon Reinach, “L’Art et la Magie: À propos des Peintures et des Gravures de l’Âge du Renne,” *L’Anthropologie* 14 (1903): 257–66, reprinted in Reinach, *Cultes, Mythes et Religions* (Paris: Leroux, 1905), 1:125–36.

24. See Laming-Emperaire, *La Signification*, 72–75.

25. Alan Houghton Brodrick, *The Abbe Breuil: Prehistorian, A Biography* (London: Hutchinson, 1963), 240.

26. Lawrence Guy Straus, “L’Abbé Henri Breuil,” *Bulletin of the History of Archaeology* 2, no. 1 (1992): 5–9; D. A. E. Garrod, “Obituary,” *Man* 61 (1961): 205–7.

27. André Leroi-Gourhan, *Treasures of Prehistoric Art*, trans. Norbert Guterman (New York: Abrams, 1967), 18; 34, 107. See also Philippe Soulier, “Henri Breuil et André Leroi-Gourhan, Préhistoriens au xxe Siècle,” in *Sur les Chemins de la Préhistoire: L’Abbé Breuil du Périgord à l’Afrique du Sud*, ed. Noël Coye (Nemours: Musée départmental de Préhistoire d’Île de France, 2006), 196–207, and Laming-Emperaire, *La Signification*, 77–82.

28. The most complete biography is Arnaud Hurel, *L’Abbé Breuil: Un Préhistorien dans le Siècle* (Paris: Editions CNRS, 2011).

29. See Ministère de la Culture, *Lartet, Breuil, Peyrony et les Autres* (Sarlat: Ministère de la Culture, 1990), 7.

30. For details, see John Wymer, *The Paleolithic Age* (London: Croom Helm, 1969); John M. Coles and E. S. Higgs, *The Archaeology of Early Man* (London: Faber and Faber, 1969).

31. Henri Breuil, *Four Hundred Centuries of Cave Art*, trans. Mary E. Boyle (Montignac: Centre d’Études et de Documentation Préhistoriques, 1952), 91, 15.

32. Hurel, *L’Abbé Breuil*, 97.

33. Emile Cartailhac, “Note sur les Dessins préhistoriques de la Grotte de Marsoulas,” *Comptes rendus des Séances de l’Académie des Inscriptions et Belles-Lettres* 46 (1902): 478–83; Cartailhac and Henri Breuil, “Les Peintures et Gravures murales des Cavernes Pyrénéennes: II (1), Marsoulas,” *L’Anthropologie* 16 (1905): 431–44. See also Fanny Defrance-Jublor and Arnaud Hurel, “Inventer et Négocier sa Vocation à Distance de l’Eglise: Henri Breuil, Préhistorien et Prêtre,” in Coye, ed., *Sur les Chemins de la Préhistoire*, 173–81.

34. Emile Cartailhac and Henri Breuil, *La Caverne d’Altamira à Santillana près Santander (Espagne)* (Monaco: Imprimerie de Monaco, 1906), 62, 79. Many commentators have remarked, quite correctly, that

Breuil's reproductions are works of art by themselves.

35. See Gilles Tosello and Carole Fritz, "L'Abbé Breuil et les Relevés d'Art paléolithique," in Coye, ed., *Sur les Chemins de la Préhistoire*, 103–12, and Bahn, *Images of the Ice Age*, 67–69.

36. The title "abbé" or, more correctly, "M. l'Abbé," referred in French usage to an unattached priest who was neither a vicar, a rector, a curate, nor a member of an order. At one point he objected to any comparison between himself and his friend Teilhard de Chardin: "You can hardly compare us," he said. "He is a Jesuit. I am a secular priest. Besides, Teilhard stuck his neck out with all his philosophical speculations. I have never indulged in such things" (see Brodrick, *The Abbé Breuil*, 49n1, 166).

37. William Davies, "The Abbé Henri Breuil (1877–1961)," in *Great Prehistorians: 150 Years of Paleolithic Research, 1859–2009*, ed. R. Hosfield, F. Wendan-Smith, and M. Pope, special issue *Lithics: The Journal of the Lithic Studies Society* 30 (2009): 134. See also Hurel, *L'Abbé Breuil*, 110–12.

38. See Emile Cartailhac and Emile Breuil, "Les Peintures et Gravures murales des Cavernes Pyrénéennes: III, Niaux," *L'Anthropologie* 19 (1908): 15–46; Cartailhac and Breuil, "Les Peintures et Gravures murales des Cavernes Pyrénéennes: IV (1), Gargas, Caverne d'Aventignan (Hautes Pyrénées)," *L'Anthropologie* 21 (1910): 129–48.

39. Henri Breuil, "Essai de Stratigraphie des Dépôts de l'Âge du Renne," *Congrès préhistorique de France: Compte rendu de la première session, Périgueux, 1905* (Paris: Schleicher frères, 1906), 74–80; Breuil, "L'Evolution de l'Art pariétal de l'Âge du Renne," *Congrès international d'anthropologie et d'archéologie préhistoriques: Compte rendu de la treizième session, Monaco, 1906* (Monaco: Imprimerie de Monaco, 1908), 367–86. Hurel, *L'Abbé Breuil*, 159–61.

40. See Henri Breuil, "L'Âge des Cavernes et Roches ornées de France et d'Espagne," *Revue Archéologique* 19 (1912): 193–234; Breuil, "Les Subdivisions du Paléolithique Supérieur et Leur Signification," *Congrès International d'Anthropologie et d'Archéologie préhistoriques: Compte Rendu de la session XIV, Genève,* 1912 (Geneva: Publication de la Société Linnéenne, 1912), 1:165–238.

41. Henri Breuil, "L'Art à ses Débuts: L'Enfant, Les Primitifs," *Revue philosophique* 7 (1906): 161–78; Breuil, "Quelques Notes sur l'Origine d'Art," in *Dall'astrazione all'organicita*, ed. Alberto Carlo Blanc (Rome: De Luca, 1958), 87–92. See also Laming-Emperaire, *La Signification*, 125–33.

42. For a discussion of the limitations of the analogy, see Lorblanchet and Bahn, *The First Artists*, 19–22, and, more generally, Geneviève von Petzinger and April Nowell, "A Question of Style: Reconsidering the Stylistic Approach to Dating Paleolithic Parietal Art in France," *Antiquity* 85 (2011): 1165–83.

43. Steven J. Mithen, *Thoughtful Foragers: A Study of Prehistoric Decision-Making* (Cambridge: Cambridge University Press, 1990), 245.

44. Bahn, *Images*, 95.

45. Henri Breuil, "L'Evolution de la Peinture et de la Gravure sur les Murailles dans les Cavernes ornées de l'Âge du Renne," *Congrès préhistorique de France, 1ère Session, Périgueux, 1905* (Paris: Schleichen Frères, 1906); Breuil, "L'Évolution de l'Art pariétal des Cavernes de l'Âge du Renne," *Congrès international d'Anthropologie et Archéologie préhistoriques: Compte rendu de la treizième session, Monaco, 1906* (Monaco: Imprimerie de Monaco, 1907), 1:367–86.

46. See Breuil, *Four Hundred Centuries*, 38–42. Breuil first proposed the two-cycle theory in "L'Evolution de l'Art pariétal dans les Cavernes et Abris ornés de France," *Congrès préhistorique de France: Compte rendu de la onzième session*, *Périgueux 1934* (Paris: Société préhistorique française, 1935), 102–18.

47. Lawson, *Painted Caves*, 91.

48. Henry Balfour, *The Evolution of Decorative Art: An Essay upon its Origin and Development as Illustrated by the Art of Modern Races of Mankind* (London: Percival and Co., 1893). Hurel reported that Breuil also acquired Alfred Cort Haddon, *Evolution in Art: As Illustrated by the Life-Histories of Designs* (London: W. Scott, 1895) (see Hurel, *L'Abbé Breuil*, 141). See also Lawson, *Painted Caves*, 202–4.

49. See also D. Bruce Dickson, *The Dawn of Belief: Religion in the Upper Paleolithic of Southwestern Europe* (Tucson: University of Arizona Press, 1990), 123–31.

50. Laming-Emperaire, *La Signification*, 91.

51. Breuil, *Four Hundred Centuries*, 22–23.

52. Breuil's later critics made the obvious comment that he had *assumed*, for instance, that lines represented spears or grids represented nets or snares.

53. Breuil, *Four Hundred Centuries*, 44.

54. B. Delluc and G. Delluc, *Dictionnaire de Lascaux* (Bordeaux: Editions du Sud-Ouest, 2008), 268.

55. Bahn, *Images of the Ice Age*, 284–86.

56. Laming-Emperaire, *La Signification*, 98.

57. Max Raphael, *Trois Essais sur la Signification de l'Art pariétal paléolithique*, ed. Patrick Brault, trans. Marie-France Brault, Patrick Brault, Evelyn Kuhn, and Rainer Rochliz (Paris: Le Couteau dans la Plaie/Kronos, 1986), 8.

58. Stanley Mitchell, "Max Raphael: Aesthetics and Politics," in *Marxism and the History of Art: From William Morris to the New Left*, ed. Andrew Hemingway (London: Pluto, 2006), 104.

59. John Tagg, "The Method of Max Raphael: Art History Set Back on Its Feet," *Radical Philosophy* 12 (1975): 5; Claude Schafer, "Max Raphael (1889–1952): Une Biographie," in Brault, ed., *Trois Essais*, 205.

60. Anon., "Max Raphael: Biography," in "Biography: The Max Raphael Project," http://maxraphael.org/about/biography.

61. Max Raphael, *The Demands of Art*, trans. Norbert Guterman, Bollingen Series, 78 (Princeton, NJ: Princeton University Press, 1968). The original title was *Wie will ein Kunstwerkgesehen sein?*, which might be

translated as *How Must a Work of Art Be Looked At?* A review of *Demands* in the *TLS*, February 13, 1969, called Raphael "perhaps the greatest philosopher of art of this century."

62. John Berger, "Revolutionary Undoing," *New Society* 327 (January 1969): 24. Reprinted in Berger, *Selected Essays and Articles: The Look of Things* (Harmondsworth: Penguin, 1972), 210.

63. The story of the SS *Mouzinho* along with a photograph of Raphael and other refugees awaiting their turn to board is available at https://litdigitaldiversity.northeastern.edu/item/wp:1919/.

64. Ilse Hirschfeld to William McGuire, June 29, 1980; McGuire to Hirschfeld, July 3, 1980, Max Raphael Papers, Getty Research Institute, Los Angeles, Archive number 920050, box 12, file 1.

65. William McGuire, *Bollingen: An Adventure in Collecting the Past* (Princeton, NJ: Princeton University Press, 1982), 87. The Bollingen Foundation was established by Paul Mellon in 1945. Max Raphael was one of the first beneficiaries of the philanthropy of one of the wealthiest individuals in the United States. None of the biographical sketches I have found mentioned the Bollingen stipend. Typical is the remark of John Tagg: "He hated America as the epitome of all he had fought against in writing. Fearing to be contaminated by the very place in which he sought refuge, he chose to live in penury on the Lower East Side of New York City, in a tiny apartment, surviving on the pittance his wife earned as an office cleaner" (Tagg, "The Method of Max Raphael," 10). The stipend is mentioned in a letter from D. D. Shepard of the Old Dominion Foundation (predecessor to Bollingen), December 29, 1945, to Raphael, Raphael Papers, box 12, file 1.

66. Max Raphael, *Prehistoric Cave Paintings*, trans. Norbert Guterman, Bollingen Series 4 (New York: Pantheon, 1945).

67. Gen Doy, *Materializing Art History* (Oxford: Berg, 1998), 7.

68. Raphael, *The Demands of Art*, xx.

69. Max Raphael, *Proudhon, Marx, Picasso: Trois Études sur la Sociologie de l'Art* (Paris: Excelsior, 1933).

70. Raphael, *The Demands of Art*, 187.

71. Max Raphael, "The Cycle of Civilizations," unpublished essay, Raphael Papers, box 1, file 5.

72. Raphael, *The Demands of Art*, 191.

73. Ibid., 194.

74. Raphael, "The Cycle of Civilizations."

75. Raphael, *The Demands of Art*, 198.

76. Ibid., 203.

77. Raphael, "The Cycle of Civilizations."

78. Raphael, *Prehistoric Cave Paintings*, 2–3.

79. Willis H. Truitt, "A Marxist Theory of Aesthetic Inquiry: The Contribution of Max Raphael," *Journal of Aesthetic Education* 5 (1971): 154–55.

80. See Willis H. Truitt, "Ideology, Expression and Mediation," *Philosophical Forum* 3 (1972): 468–97, or essentially the same paper

republished in *For Dirk Struik: Scientific, Historical, and Political Essays in Honor of Dirk J. Struik* (Dordrecht: D. Riedel, 1974), 435–63.

81. See the appendix to Raphael, *The Demands of Art*, "Toward an Empirical Theory of Art (1941)," 207–38. This text was written aboard the *Mouzinho* during the 1941 crossing from Lisbon to New York. On the connection between experience and empiricism, see Barry Cooper, "Eric Voegelin, Empirical Political Scientist," in Barry Cooper, *The Restoration of Political Science and the Crisis of Modernity* (Lewiston, NY: Edwin Mellen, 1989), 271–82.

82. Willis H. Truitt, "Towards an Empirical Theory of Art: A Retrospective Comment on Max Raphael's Contribution to Marxian Aesthetics," *British Journal of Aesthetics* 11 (1971): 229.

83. See Doy, *Materializing Art History*, 87–92; Germaine Bazin, *Histoire de l'Histoire de l'Art: De Vasari à nos Jours* (Paris: Albin Michel, 1986); Hanna Deinhard, *Meaning and Expression: Towards a Sociology of Art* (Boston: Beacon, 1970).

84. Truitt, "Towards an Empirical Theory of Art," 227.

85. See Eric Voegelin, "The Formation of the Marxian Revolutionary Idea," *Review of Politics* 12 (1950): 275–302; Voegelin, "Gnostic Socialism: Marx," in *Crisis and the Apocalypse of Man*, Vol. 8 of *History of Political Ideas*, ed. David Walsh (Columbia: University of Missouri Press, 1999), *CWEV* 26:303–72; Barry Cooper, "Recent Studies on Marx," *Political Science Reviewer* 2 (1972): 35–74.

86. Max Raphael, *Prehistoric Pottery and Civilization in Egypt*, trans. Norbert Guterman, Bollingen Series 8 (New York: Pantheon, 1947).

87. Shirley Chesney, "Max Raphael (1889–1952): A Pioneer of the Semiotic Approach to Paleolithic Art," *Semiotica* 100 (1994): 117, and Chesney, "Max Raphael's Contribution to the Study of Prehistoric Symbol Systems," in *Rock Art and Prehistory: Papers Presented to Symposium G of the AURA Congress, Darwin 1988*, ed. Paul Bahn and Andrée Rosenfeld (Oxford: Oxbow Monograph 10, 1991), 15.

88. Raphael, application to the Wenner-Gren Foundation, 1951, quoted in Chesney, "Max Raphael," 115. In seeing the need to integrate the signs with the animal compositions, Raphael was at least two generations ahead of his time, though the "signs" have presented a problem from the early twentieth century. See Edouard Piette, "Les Écritures de l'Âge gliptique," *L'Anthropologie* 16 (1905): 1–11.

89. See K. Greene, "V. Gordon Childe and the Vocabulary of Revolutionary Change," *Antiquity* 73 (1999): 97–109.

90. Raphael, *Prehistoric Cave Paintings*, 2.

91. Ibid., 49–50.

92. Spyros Papapetros, "Modern Architecture and Prehistory: Retracing the *Eternal Present* (Siegfried Gideon and André Leroi-Gourhan)," *Res* 63/64 (Spring-Autumn 2013): 188–89.

93. The quotation, taken from *The Tempest*, 2.1, is not particularly apt. There Antonio uses the phrase to suggest to Sebastian that prior circumstances have led them to their present opportunity—to murder

Alonso and Gonzalo so that Sebastian can become king of Naples. Perhaps Raphael was alluding to an apocalyptic revolution, but for Shakespeare the plot failed because Prospero, who was both the Duke of Milan and a great sorcerer, commanded Ariel to distract them.

94. Raphael, *Prehistoric Cave Paintings*, 3–4.

95. Shirley Chesney, "Max Raphael's Contributions," 15. See also Raphael, *Prehistoric Cave Paintings*, vii; and Michèle Barrett, "Max Raphael and the Question of Aesthetics," *New Left Review* 161 (January-February 1987): 78–97. In fact, Emile Cartailhac also considered "compositions," but by midcentury his approach had effectively been eclipsed by Breuil; see Cartailhac, "Les plus anciens Artistes de l'Humanité," *Revue des Pyrénées* 20 (1908): 509–27.

96. Raphael, *Prehistoric Cave Paintings*, 7–8. There was, clearly, an a priori element to Raphael's argument. In his view there were four kinds of societies: hunting, agricultural, trading, and industrial. Social relations were distinct in each of them, as any Marxist or non-Marxist might argue. So far as Paleolithic hunters and foragers were concerned, by and large hunting was expressed in magic spiritual practices and totemistic social or clan organizations. See his elaboration in Raphael, "Philosophy of History," Raphael Papers, box 1, file 5; see also Raphael, *Prehistoric Cave Paintings*, 3–7.

97. Raphael, *Prehistoric Cave Paintings*, 17–19, 33–34.

98. Ibid., 31–32.

99. Ibid., 10.

100. Ibid., 38–39.

101. See also Raphael, *The Demands of Art*, 137, where he added that the imagery might equally depict "wars between totem clans or between male warriors [bison] and female sorcerers [does] of a single clan." Again to state the obvious, such an interpretation also contained major a priori elements.

102. Contrast *Hamlet*, 1.5.

103. Raphael, *Prehistoric Cave Paintings*, 45–48.

104. Chesney, "Max Raphael's Contribution," 18. Likewise, Laming-Emperaire noted that "unfortunately" Raphael's book "is impossible to use" because both the significance of his hypothesis concerning the historical signification of representation and the totemism thesis were simply assumed (see Laming-Emperaire, *La Signification*, 119). We discuss this problem further in the following section.

105. "Shirley Chesney on Max Raphael," *The Max Raphael Project*, 2.

106. Ibid., 5.

107. Chesney, "Max Raphael's Contribution," 20.

108. Quoted in Schaffer, "Max Raphael," 213.

109. Bahn, *Images of the Ice Age*, 303.

110. Laming-Emperaire, *La Signification*, 118.

111. See, for example, Jean Clottes, *What Is Paleolithic Art? Cave Paintings and the Dawn of Human Creativity*, trans. Oliver Y. Martin and Robert D. Martin (Chicago: University of Chicago Press, 2016), 13; or

Margaret W. Conkey, "The Structural Analysis of Paleolithic Art," in *Archaeological Thought in America*, ed. C. C. Lamberg-Karlovsky (Cambridge: Cambridge University Press, 1989), 135–54.

112. See, for example, Barry Cooper, "Reduction, Reminiscence and the Search for Truth," in *The Philosophy of Order: Essays on History, Consciousness and Politics, for Eric Voegelin on his Eightieth Birthday, January 3, 1981*, ed. Peter J. Opitz and Gregor Sebba (Stuttgart: Klett-Cotta, 1981), 316–31.

113. Claude Lévi-Strauss, *Myth and Meaning* (New York: Schocken, 1979), 9.

114. André Leroi-Gourhan, *The Dawn of European Art: An Introduction to Paleolithic Cave Painting*, trans. Sara Champion (London: Cambridge University Press, 1982), 43. See also Richard Bradley, *Image and Audience: Rethinking Prehistoric Art* (Oxford: Oxford University Press, 2009), 31–42.

115. Leroi-Gourhan, *The Dawn of European Art*, 66.

116. Lawson, *Painted Caves*, 211.

117. Annette Laming, "Un Sanctuaire paléolithique: La Grotte de Lascaux," *L'Âge nouveau* 30 (1948): 63–69; *Lascaux: Chapelle sixtine de la Préhistoire*, text by Annette Laming, photographs by Fernand Windels (Vézère: Centre d'Études et de Documentation, 1948). See also Laming, "An Interpretation of Prehistoric Art: Lascaux," *Antiquity and Survival* 3 (1955): 205–20, and Laming, *Lascaux: Paintings and Engravings*, trans. E. F. Armstrong (Harmondsworth: Penguin, 1959).

118. For biographical details, see Laming-Emperaire, *La Signification*, 1–3; André Leroi-Gourhan, "Préface," *Journal de la Société des Américanistes* 67 (1980): 21–22; Leroi-Gourhan, "Nécrologie," *Bulletin de la Société préhistorique française* 75 (1978): 7–8; Danièle Lavallée, "Nécrologie: Annette Laming-Emperaire (1917–1977)," *Journal de la Société des Américanistes*, 65 (1978), 224–26. See also "Publications d'Annette Laming-Emperaire," *Journal de la Société des Américanistes* 67 (1980): 23–28. Laming-Emperaire provided a brief account of her work in Brazil in Laming-Emperaire, introduction to *Grottes et Abris de la Région de Lagoa Santa Minas Gerais, Brésil*, ed. Laming-Emperaire (Paris: EPHE, VIe Section, 1971), 1–9.

119. Laming-Emperaire, *La Signification*, 135–36.

120. Part IV, "Documents," provided a systematic account of all the cave documents available at the time.

121. Laming-Emperaire, *La Signification*, 161.

122. This was likely a reference to the work of Claude Lévi-Strauss. The first citation in *La Signification* was to Lévi-Strauss, "Histoire et Ethnologie," *Revue de Métaphysique et de Morale* 54 (1949): 363–91. Alluding to the work of Lévi-Strauss did not make her some sort of dogmatic card-carrying structuralist. In 1949, one could scarcely speak of Lévi-Strauss as a structuralist. So far as I can tell, Laming-Emperaire had a subtle approach that was all her own. See, for example, Laming-Emperaire, "Préhistoire, Sciences humaines et Sciences de la Nature,"

Bulletin de la Société préhistorique française 66 (1969): 166–71; Laming-Emperaire, "Archéologie préhistorique et Sciences humaines," in *Echanges et Communications: Mélanges offerts à Claude Lévi-Strauss à l'Occasion de son 60ème Anniversaire*, ed. Jean Povillon and Pierre Maranda (The Hague: Mouton, 1970), 393–412; Laming-Emperaire, "L'Analyse descriptive de l'Industrie lithique," *Paléo-Québec*, no. 9 (Montreal: Laboratoire d'Archéologie de l'UQAM, 1979), 9–58.

123. Laming-Emperaire, *La Signification*, 168.

124. Bahn, *Images of the Ice Age*, 312.

125. Laming-Emperaire, *La Signification*, 170.

126. Ibid., 294.

127. Bahn, *Images of the Ice Age*, 304.

128. For biographical material, see Gilles Gaucher, "André Leroi-Gourhan, 1911–1986," *Bulletin de la Société préhistorique française* 84 (1987): 302–15. A bibliography of Leroi-Gourhan is published in ibid., 316–23. A second important source of biographical information is Leroi-Gourhan's conversation with Claude-Henri Rocquet, *Leroi-Gourhan, Les Racines du Monde: Entretiens avec Claude-Henri Rocquet* (Paris: Belfond, 1982), 24–63; 111–18. An appreciation of his impact on French scholarship in general and the CNRS in particular is *André Leroi-Gourhan ou Les Voies de l'Homme: Actes du Colloque du CNRS, Mars, 1987* (Paris: Albin Michel, 1988). See also Anon., "Biographie André Leroi-Gourhan, Préhistorien et ethnologue," *Hominidés*, http://www.hominides.com/html/biographies/andre-leroi-gourhan.php; and Marc Richir, *Leroi-Gourhan: Essence et Contingence dans la Destinée humaine* (Paris: DeBoeck, 1996).

129. See André Leroi-Gourhan and M. Brézillon, "L'Habitation magdalénienne: No. 1 de Pincevent, près Montereau (Seine et Marne)," *Gallia-Préhistoire* 9 (1966): 263–85. See also Annette Michelson, "In Praise of Horizontality: André Leroi-Gourhan, 1911–1986," *October* 37 (1986): 3–5. Several of the contributors dealt with this aspect of his work in the special issue of the *Bulletin de la Société préhistorique française* 84 (1987): in particular, see Pierre Courbin, "André Leroi-Gourhan et la Technique des Fouilles," 328–34; M. Julien, C. Karlin, and P. Bodu, "Pincevent: Où en est le Modèle théorique Aujourd'hui?," 335–52; F. Audouze, "Des Modèles et des Faits," 343–52.

130. André Leroi-Gourhan, *The Hunters of Prehistory*, trans. Claire Jacobson (New York: Atheneum 1989), 17.

131. See André Leroi-Gourhan, *Evolution et Techniques*, Vol. 1, *L'Homme et la Matière*, 2nd ed. (Paris: Albin Michel, 1971), 114, 319; Pierre Lemonnier, *Les Salines de l'Ouest, Logique technique, Logique sociale* (Paris: Edition de la Maison des Sciences de l'Homme, 1980), 8. See also Peter Bleed, "Trees or Chains, Links or Branches: Conceptual Alternatives for Consideration of Stone Tool Production and other Sequential Activities," *Journal of Archaeological Method and Theory* 8 (2001): 101–27; Nathan Schlanger, "'Suivre les Gestes, Éclat par Éclat': La Chaîne opératoire d'André Leroi-Gourhan," in *Autour de l'Homme: Contexte et*

Actualité d'André Leroi-Gourhan, ed. Françoise Audouze and Nathan Schlanger (Antibes: Éditions APDCA, 2004), 127–47.

132. Paul Graves, "Gesture and Speech," *Antiquity* 68 (1994): 438.

133. Françoise Audouze, "Leroi-Gourhan, A Philosopher of Technique and Evolution," *Journal of Archaeological Research* 10 (2002): 287.

134. Françoise Audouze and Alain Schnapp, introduction to "Un Homme . . . Une Oeuvre: André Leroi-Gourhan," ed. Audouze and Schnapp, *Les Nouvelles de l'Archéologie* 48/49 (1992): 10.

135. Tim Ingold, "'Tools for the Hand, Language for the Face': An Appreciation of Leroi-Gourhan's *Gesture and Speech*," *Studies in History and Philosophy of Biological and Biomedical Sciences* 30 (1999): 451.

136. Leroi-Gourhan, *Les Racines du Monde*, 35; Audouze, "Leroi-Gourhan," 281.

137. André Leroi-Gourhan, *Gesture and Speech*, trans. Anna Bostock Berger (Cambridge, MA: MIT Press, 1993), 141; Françoise Audouze, "New Advances in French Prehistory," *Antiquity* 73 (1999): 167–74.

138. Leroi-Gourhan, *Les Racines du Monde*, 158, 174.

139. Claude Lévi-Strauss, "'Nous avons, lui et moi, essayé de faire à peu près la même Chose,'" in *André Leroi-Gourhan ou les Voies de l'Homme*, 203–4. Leroi-Gourhan said of Lévi-Strauss that they were "a little antithetical, but antithetical in a way that eventually comes together" (Leroi-Gourhan, *Les Racines du Monde*, 109).

140. See Christopher Johnson, "Leroi-Gourhan and the Limits of the Human," *French Studies: A Quarterly Review* 65 (2011): 471–87. Leroi-Gourhan had not read McLuhan (*Les Racines Du Monde*, 175). See also Alison Ross, "Between Luxury and Need: The Idea of Distance in Philosophical Anthropology," *International Journal of Philosophical Studies* 25 (2017): 380–81.

141. Leroi-Gourhan, *Gesture and Speech*, 18–20.

142. See also Erwin Strauss, "The Upright Posture," *Psychiatric Quarterly* 26 (1952): 529–61.

143. Leroi-Gourhan, *The Hunters of Prehistory*, 41–42.

144. Leroi-Gourhan, *Gesture and Speech*, 235.

145. Ingold, "'Tools for the Hand, Language for the Face,'" 418.

146. Leroi-Gourhan, *Gesture and Speech*, 227.

147. Henri Bergson, *Creative Evolution*, trans. A. Mitchell (London: Macmillan, 1911), 146–47.

148. Leroi-Gourhan, *Gesture and Speech*, 187.

149. Ibid., 188, 373.

150. Ibid., 190.

151. Ibid., 211.

152. André Leroi-Gourhan, *Préhistoire de l'Art occidental* (Paris: Mazenod, 1965). A second edition appeared in 1971. We refer to the English version, cited above, *Treasures of Prehistoric Art*.

153. Leroi-Gourhan, *Treasures of Prehistoric Art*, 19.

154. André Leroi-Gourhan, "The Religion of the Caves: Magic or Metaphysics," *October* 37 (1986): 9. This article is a translation of Leroi-

Gourhan, “La Religion des Cavernes: Magie ou Métaphysique,” *Sciences et Avenir* 228 (1966): 106–11, 140, reprinted in Leroi-Gourhan, *Le Fil du Temps: Ethnologie et Préhistoire* (Paris: Fayard, 1983). Citations are to the English translation by Annette Michelson.

155. Leroi-Gourhan, *Treasures of Prehistoric Art*, 35.

156. Ibid., 104.

157. Ibid., 108–11. For a graphic representation of this ideal Paleolithic sanctuary, see Leroi-Gourhan, “The Evolution of Paleolithic Art,” *Scientific American* 218 (February 1968): 60–61. Some of Leroi-Gourhan’s critics dismissed this ideal type as a simplification, apparently unaware that simplification was the purpose of the exercise.

158. Leroi-Gourhan, *Treasures of Prehistoric Art*, 149.

159. Ibid., 174.

160. Mark P. Leone, “Some Opinions about Recovering Mind,” *American Antiquity* 47 (1982): 744.

161. See Michel Lorblanchet, “The Archaeological Significance of the Results of Pigment Analyses in the Quercy Caves,” *Rock Art Research* 7 (1990): 19–20; Michel Lorblanchet and Paul Bahn, eds., *Rock Art Studies: The Post-Stylistic Age, or Where Do We Go from Here?* (Oxford: Oxbow, 1993), esp. “Introduction,” v–viii; Paul Pettitt and Alistair Pike, “Dating European Paleolithic Cave Art: Progress, Prospects, Problems,” *Journal of Archaeological Method and Theory* 14 (2007): 27–47.

162. André Varagnac, “Débats et Combats: Lire la Préhistoire: Deux Interprétations de l’Art pariétal, La Succession de l’Abbé Breuil,” *Annales, Histoire, Sciences Sociales* 24 (1969): 1249.

163. Ibid., 1254, 1256–60.

164. Hurel, *L’Abbé Breuil*, 418. He had Laming-Emperaire’s remark, that science progresses “by successive leaps,” in mind (see Laming-Emperaire, *La Signification*, 170).

165. Hurel, *L’Abbé Breuil*, 419–20: “Non, c’est du battage imaginatif et commercial.”

166. Henri Breuil and R. Lantier, *Les Hommes de la Pierre ancienne*, 2nd ed. (Paris: Payot, 1959), 237. For Leroi-Gourhan’s mostly implicit, but occasionally explicit criticism of Breuil, see André Leroi-Gourhan, “La Fonction des Signes dans les Sanctuaires paléolithiques,” *Bulletin de la Société préhistorique française* 55 (1958): 307–21; Leroi-Gourhan, “Le Symbolisme des grands Signes dans l’Art pariétal paléolithique,” ibid., 384–98; Leroi-Gourhan, “Répartition et Groupement des Animaux dans l’Art pariétal paléolithique,” ibid., 515–28.

167. P. Soulier, “Henri Breuil et André Leroi-Gourhan: Préhistoriens au xxe Siècle,” in Coye, ed., *Sur Les Chemins de la Préhistoire*, 206.

168. Leroi-Gourhan, *Treasures of Prehistoric Art*, 188. See also Laming-Emperaire, *La Signification*, chap. 4.

169. Leroi-Gourhan, *Les Racines du Monde*, 214–17. At the conclusion of *Lascaux Inconnu*, the authors were more circumspect, noting only that “circumstances” led them “to regret bitterly that an attentive and general dissection using the appropriate means could not be conducted”; Arlette

Leroi-Gourhan and J. Allain, eds., *Lascaux Inconnu*, XIIe Supplément à "Gallia Préhistoire," (Paris: CNRS, 1979), 367.

170. Leone, "Some Opinions about Recovering Mind," 744.

171. See the classic treatment of this problem, Wittgenstein's discussion of a duck-rabbit or of "seeing that" and "seeing as"; Ludwig Wittgenstein, *Philosophical Investigations* (Oxford: Blackwell, 1953), 165–66.

172. See Ucko and Rosenfeld, *Paleolithic Cave Art*, 195–99; Anthony Stevens, "Animals in Paleolithic Cave Art: Leroi-Gourhan's Hypothesis," *Antiquity* 49 (1975): 54–57; Stevens, "Association of Animals in Paleolithic Cave Art: The Second Hypothesis," *Science and Archaeology* 16 (1975): 3–9.

173. Leroi-Gourhan, "The Religion of the Caves," 14.

174. Annette Laming-Emperaire, "Une Hypothèse de Travail: Pour Une nouvelle Approche des Sociétés préhistoriques," in *Mélanges de Préhistoire, d'Archéocivilisation, et d'Ethnologie offerts à André Varagnac* (Paris: Ecole Pratique des Hautes Etudes, VIe Section, Centre de Recherches historiques, 1971), 541–51. An earlier version, "Pour une nouvelle Approche des Sociétés préhistoriques," appeared in *Annales: Histoire, Sciences Sociales* 24 (1969): 1261–69. In a couple of places, e.g., p. 1267, Laming-Emperaire was rather more assertive than she was in the revised version. About the same time she also wrote Laming-Emperaire, "Système de Pensée et Organisation sociale dans l'Art rupestre paléolithique," in *L'Homme de Cro-Magnon: Anthropologie et Archéologie, 1868–1968*, ed. Gabriel Camps and Georges Olivier (Paris: Arts et Métiers graphiques, 1970), 197–212. All three papers made similar arguments and suggested a new direction for research.

175. See the remarks of André Leroi-Gourhan, "Considérations sur l'Organisation spatiale des Figures animales dans l'Art pariétal paléolithique," *Santander Symposium* (1970): 281.

176. Mircea Eliade, *Méphistophélès et l'Androgyne* (Paris: Gallimard, 1965); published in English as *The Two and the One*, trans. J. M. Cohen (New York: Harper, 1965).

177. Laming-Emperaire, "Une Hypothèse de Travail," 543.

178. Claude Lévi-Strauss, *The Elementary Structures of Kinship*, rev. ed., trans. J. H. Bell and J. R. von Sturmer (Boston: Beacon, 1969).

179. Laming-Emperaire, "Une Hypothèse de Travail," 544.

180. Ibid., 547.

181. Ibid., 551.

182. Annette Laming-Emperaire, "Art rupestre et Organisation sociale," *Santander Symposium* (1972): 65–82. More precisely, A. Beltrán of the University of Zaragoza read it to the symposium in her absence.

183. Laming-Emperaire, "Art rupestre," 66.

184. Leroi-Gourhan, *Les Racines du Monde*, 219.

185. Laming-Emperaire, "Art rupestre," 70–71.

186. Ibid., 77; Laming-Emperaire, "Système de Pensée," 203–4.

187. For a balanced appraisal of the "structuralists," see Bahn, *Images*

of the Ice Age, 97–98, 251, 303–12.

Chapter 6

1. In keeping with the requirements of the day, he wrote two theses. The "little thesis" was Jean Clottes, *Le Lot préhistorique: Inventaire préhistorique et protohistorique des Origines au premier Âge du Fer inclus* (Cahors: Société des Études littéraires, scientifiques, et artistiques du Lot, 1969); his "principal thesis" was Clottes, *Inventaire des Mégalithes de la France*, Vol. 5, *Lot: Supplément à Gallia Préhistoire* (Paris: Centre Nationale de la Recherche Scientifique, 1977).

2. For biographical and bibliographical details see Jean Clottes, *Voyage en Préhistoire: L'Art des Cavernes et des Abris de la Découverte à l'Interprétation* (Paris: La Maison des Roches, 1998), introduction, 5–23; bibliographie, 456–60. Also Clottes, "Recent Studies on Paleolithic Art," *Cambridge Archaeological Journal* 6 (1996): 179–89.

3. Cosquer recounted this experience in his memoir. It is difficult to avoid transposing it to his prehistoric predecessors. How many times in the past must artists have had their lamps go out? How many times must they also have thought they would die deep underground? Cosquer's experience reminds contemporary humans how dangerous the caves can be. He also reminds us that danger is part of their allure.

4. Henri Cosquer, *La Grotte Cosquer: Plongée dans la Préhistoire*, with the assistance of Valérie Fetter and Bernard Franco (SOLAR, 1992), 36–40. This memoir by Barbu was written in personal, conversational, and idiomatic style, which meant I had to look up many more words than usual. The author noted that his beard made him look slightly Magdalenian and, another coincidence, the vessel that he used as a diving tender was christened *The Cro-Magnon* by its previous owner.

5. Cosquer, *La Grotte Cosquer*, 42.

6. Ibid., 110.

7. Ibid., 111.

8. Ibid., 113.

9. Initial press reports claimed that the preservation of the art was a result of "currents of fresh air that reach the grotto through fissures in the rocks above it" (Philip Jacobson, "French Diver finds Prehistoric Art Gallery," *The Times*, October 19, 1991). This was also Cosquer's opinion (Cosquer, *La Grotte Cosquer*, 32). If this notion were true, the possibility of drilling an access tunnel from above would exist. See Paul Bahn, "Prehistoric Wonder or a Mammoth Red Herring?," *Independent on Sunday*, January 12, 1992. See also Andrew J. Lawson, *Painted Caves: Paleolithic Rock Art in Western Europe* (Oxford: Oxford University Press, 2012), 313, who repeated the statement about a "fissure" filling the cave with "breathable air." In fact, the volumetric measurement of the cave was not completed until December 1994. This operation was also extremely hazardous. In the event, "the climatological study revealed that the cave's atmosphere is under pressure: if conditions were altered

the water level could rise by nearly a metre into the non-submerged area, covering numerous paintings and engravings"; see Jean Clottes, Jean Courtin, Jacques Collina-Girard, Maurice Arnold, and Hélèna Valladas, "News from Cosquer Cave: Climatic Studies, Recording, Sampling, Dates," *Antiquity* 71 (1997): 321.

10. See Paul Bahn, *Images of the Ice Age* (Oxford: Oxford University Press, 2016), 120–21, and the discussion by Juan María Apellániz, *El Análisis de la Autoría y la Autentifiación de las Pinturas de Zubialde (Alava)*, Cuadernos de Arqueología, no. 15 (Bilbao: Universidad de Deusto, 1995), and Jesus Altuna, J. M. Apellaníz, and I. Barandiarán, *Estudio de las Pinturas de Zubialde (Alava): Resumen de los Resultados* (Vitoria: Dept. de Cultura, Diputacíon Flora de Alava, 1992). See also Bahn, "Putting a Brave Face on a Fake," *Cambridge Archaeological Journal* 6 (1996): 309–10; Robert G. Bednarik, "Fake Cave Art in Spain," *Artefact* 15 (1992): 37.

11. J. Clottes, A. Beltrán, J. Courtin, and H. Cosquer, "La Grotte Cosquer (Cap Morgiou, Marseille)," *Bulletin de la Société préhistorique française* 89 (1992): 98–128. When the full report was published as a book, their annoyance had been much reduced. See Jean Clottes and Jean Courtin, *The Cave beneath the Sea: Paleolithic Images of Cosquer*, trans. Marilyn Garner (New York: Harry N. Adams, 1996), chap. 1. Even so, five years after the event, Clottes and Courtin referred to having to "deal for months on end with an extremely unpleasant public controversy, which took its toll in energy" (ibid., 188).

12. Clottes et al., "La Grotte Cosquer," 120. They made the same argument in a more popular venue also: Clottes and Courtin, "La Grotte Cosquer, un An après . . . ," *Archéologia* 283 (1992): 14–19. Essentially the same points had been made by Courtin to allay Cosquer's concern that he had also been duped (Cosquer, *La Grotte Cosquer*, 113).

13. Clottes et al., "La Grotte Cosquer," 122. See also Clottes, "Correspondence scientifique," *Bulletin de la Société préhistorique française* 89 (1992): 229–30.

14. Jean Clottes, J. Courtin, H. Valladas, H. Cachier, N. Mercier, and M. Arnold, "La Grotte Cosquer datée," *Bulletin de la Société préhistorique française* 89 (1992): 230–34.

15. Later carbon-14 dating pushed the dates back to the 33–20 KYA range. See H. Valladas et al., "Radiocarbon Dating of the Decorated Cosquer Cave (France)," *Radiocarbon* 59 (2017): 621–33.

16. Clottes and Courtin, *The Cave beneath the Sea*, 174. Cosquer cave: http://www.bradshawfoundation.com/cosquer/photographs/4b.jpg.

17. Ibid., 185. Subsequent interpretation of the Cosquer handprints were not at all daring but focused on conventional questions of whether fingers were used for counting or whether they were signals of some sort. But see also Paul Pettitt et al., "New Views on Old Hands: The Context of Stencils in El Castillo and La Garma Caves (Cantabria, Spain)," *Antiquity* 88 (2014): 47.

18. Jean Clottes, Jean Courtin, and Luc Vanrell, *Cosquer Redécouvert* (Paris: Seuil, 2005), 10.

19. Owing to fears that the sea level was rising and would obliterate the remaining imagery, in 2001 the cave was officially closed and the Cosquer team supervised the laser mapping of the cave to produce a virtual model. See G. Thibaut, "3-D Modelling of the Cosquer Cave by Laser Survey," *International Newsletter on Rock Art* 28 (2001): 25–29. Even so, there are occasional reports of divers attempting to force open the steel gate at the tunnel entrance.

20. Jean-Marie Chauvet, Eliette Brunel Deschamps, and Christian Hillaire, *Chauvet Cave: The Discovery of the World's Oldest Paintings*, trans. and foreword Paul G. Bahn; epilogue Jean Clottes (London: Thames and Hudson, 2001), 15.

21. Chauvet et al., *Chauvet Cave*, 76.

22. Clottes, *Voyage en Préhistoire*, 14.

23. Chauvet et al., *Chauvet Cave*, 76.

24. Clottes, "Epilogue: Chauvet Cave Today," in Chauvet et al., *Chauvet Cave*, 95, 127. Clottes included Les Trois Frères in this list, but Paul Bahn pointed out (personal communication to me) that the floor in that cave is pristine.

25. Clottes, "Epilogue: Chauvet Cave Today," 121–22.

26. Ibid., 122.

27. Ibid., 127.

28. Ibid., 126.

29. See Peter J. Ucko, "Débuts illusoires dans l'Étude de la Tradition artistique," *Bulletin de la Société Préhistorique Ariège-Pyrénées* 42 (1987): 15–81.

30. Clottes, *Voyage en Préhistoire*, 14.

31. We refer to the English translation by Bahn: *Chauvet Cave: The Art of Earliest Times*, trans. Paul G. Bahn, ed. Jean Clottes (Salt Lake City: University of Utah Press, 2003).

32. Clottes, "Lots of Animals and Signs," in Clottes, ed., *Chauvet Cave*, 195, 212.

33. Clottes and Yanik Le Guillou, "Beyond the End of the End Chamber," in Clottes, ed., *Chauvet Cave*, 148.

34. Clottes, "Conclusion," in *Chauvet Cave*, chap. 4, 149.

35. Ibid., 195.

36. Clottes, "Epilogue: Chauvet Cave Today," 127.

37. Meyer Schapiro, an art historian, has often been credited with proposing a definition of style useful to archaeologists. According to him, style was "a system of forms with a quality of meaningful expression through which the personality of the artist and the broad outlook of a group are visible"; see Schapiro, "Style," in *Anthropology Today: An Encyclopedia Inventory*, ed. A. L. Kroeber (Chicago: University of Chicago Press, 1953), 287.

38. Paul Pettitt and Alistair Pike, "Dating European Paleolithic Cave Art: Progress, Prospects, Problems," *Journal of Archaeological Method and Theory* 14 (2007): 30.

39. Robert Bednarik, "The Age of the Côa Petroglyphs: An Obituary

to the Stylistic Dating of Paleolithic Rock-Art," *Rock Art Research* 12 (1995): 878–81.

40. Christian Züchner, "The Chauvet Cave: Radiocarbon versus Archaeology," *International Newsletter of Rock Art* 13 (1996): 25–27. See also Züchner, "Animals as Symbols in European Paleolithic Art," in *Prehistoric Art and Ideology*, ed. Emmanuel Anati (Oxford: Archeopress, 2008), 121–23.

41. See Ucko, "Débuts illusoires," 18.

42. As we noted in chapter 5, the term "post-stylistic era" was introduced by Michel Lorblanchet in 1990; see Lorblanchet, "The Archaeological Significance of the Results of Pigment Analysis in Quercy Caves," *Rock Art Research* 7 (1990): 20. As he and Paul Bahn pointed out, a poststylistic era did not mean that direct dating would replace style to establish chronology, no more than a "post-glacial" era meant that ice had vanished from the earth. Bahn and Paul Pettitt reiterated this point in connection with Chauvet; see Bahn and Pettitt, "Current Problems in Dating Paleolithic Cave Art: Candamo and Chauvet," *Antiquity* 77 (2003): 134 and references.

43. Jean Clottes, "Thematic Changes in Upper Paleolithic Art: A View from the Grotte Chauvet," *Antiquity* 70 (1996): 283.

44. Hélène Valladas, J. Clottes, J.-M. Geneste, M. A. Garcia, M. Arnold, H. Cashier, and N. Tisnérat-Laborde, "Evolution of Prehistoric Art," *Nature* 413 (October 2001): 479. See also Jean Clottes, "Twenty Thousand Years of Paleolithic Cave Art in Southern France," in *World Prehistory: Studies in Memory of Grahame Clark*, ed. John Coles, Robert Wesley, and Paul Mellars, Proceedings of the British Academy 99 (London: British Academy, 1999): 161–75.

45. Pettitt and Bahn, "Current Problems," 134.

46. Ibid., 139.

47. See Hélène Valladas and Jean Clottes, "Style, Chauvet and Radiocarbon," *Antiquity* 77 (2003): 143, and Marie-Thérèse Cuzange et al., "Radiocarbon Intercomparison Program for Chauvet Cave," *Radiocarbon* 49 (2007): 346.

48. José Javier Alcolea González and Rodrigo de Balbín Behrmann, "C14 et Style: La Chronologie de l'Art pariétal à l'Heure actuelle," *L'Anthropologie* 111 (2007): 435–66.

49. Pettitt and Pike, "Dating European Paleolithic Cave Art," 36.

50. F. J. Fortea-Pérez, "Trente-neuf dates C-14-SMA pour l'Art pariétal paléolithique des Asturies," *Bulletin de la Société Préhistorique Ariège Pyrénées* 57 (2002): 7–28. A dozen years later, the same criticism was raised regarding the Gif lab, which suggests the problem had not been addressed by the French authorities; see S. Corchón et al., "Back to the Point: New Datings for La Peña de Candamo Cave Art (Asturias)," *Zephyrus* 73 (2014): 67–81.

51. Pettitt and Pike, "Dating European Paleolithic Art," 38.

52. Michael Balter, "Going Deeper into the Grotte Chauvet," *Science* 321 (August 2008): 905.

53. Pettitt and Pike, “Dating European Paleolithic Cave Art,” 38. Clottes’s remark is in the “Conclusion” to the second book, *Chauvet Cave* (214), which means he likely had Züchner in mind as having offered this “bizarre” observation.

54. Paul Pettitt, “Art and the Middle-to Upper Paleolithic Transition in Europe: Comments on the Archeological Argument for an Early Upper Paleolithic Antiquity of the Grotte Chauvet Art,” *Journal of Human Evolution* 55 (2008): 911. The “pitfalls” were discussed in M. W. Rowe, “Radiocarbon Dating of Ancient Pictograms with Accelerator Mass Spectrometry,” *Rock Art Research* 21 (2004): 145–53.

55. Pettitt, “Art and the Middle-to-Upper Paleolithic Transition,” 915.

56. Quoted in Balter, “Going Deeper into the Grotte Chauvet,” 905.

57. Jean Combier and Guy Jouve, “Nouvelles Recherches sur l’Identité culturelle et stylistique de la Grotte Chauvet et sur la Datation par la Méthode du 14C,” *L’Anthropologie* 118 (2014): 115.

58. See Jean Clottes, “Dates directs pour les Peintures paléolithiques,” *Bulletin de la Société Préhistorique Ariège-Pyrénées* 44 (1994): 55–57. This remark was quoted by Combier and Jouve (“Nouvelles Recherches,” 125).

59. Combier and Jouve, “Nouvelles Recherches,” 129, 138.

60. Michel Lorblanchet, “Au Sujet de l’Article de J. Combier et G. Jouve, et de la Datation de la Grotte Chauvet,” *L’Anthropologie* 118 (2014): 152–58, and references.

61. Paul Pettitt and Paul Bahn, “Against Chauvet-nism: A Critique of Recent Attempts to Validate an Early Chronology for the Art of Chauvet Cave,” *L’Anthropologie* 118 (2014): 165, also 163. In 2016, the Chauvet team published yet another paper in support of chemical dating: Anita Quiles et al., “A High-Precision Chronological Model for the Decorated Upper Paleolithic Cave of Chauvet-Pont d’Arc, Ardèche, France,” *Proceedings of the National Academy of Science USA* (2006), http://www.pnas.org/cgi/doi/10.1073/pnas.1523158113. They noted only stylistic criticism from 2003 and earlier and said nothing about the chronological criticism of the archaeologists. Pettitt and Bahn’s observation could be extended another two years. That is, for two decades the Chauvet team has ignored, not answered, their critics.

62. Pettitt and Bahn, “Against Chauvet-nism,” 167–68.

63. Ibid. Bahn and Pettitt were not simply critics of the backers of the chemical dating of Chauvet. In 2015, they proposed Paul G. Bahn and Paul Pettitt, “An Alternative Chronology for the Art of Chauvet Cave,” *Antiquity* 89 (2015): 542–53.

64. Pettitt and Bahn, “Against Chauvet-nism,” 180.

65. Christian Züchner, “Comments and Additional Remarks on the Paper by Jean Combier and Guy Jouve: New Investigations into the Cultural and Stylistic Identity of the Chauvet Cave and its Radiocarbon Dating,” *L’Anthropologie* 118 (2014): 186–87.

66. See Robert N. Bellah, *Religion in Human Evolution* (Cambridge, MA: Belknap Press of Harvard University Press, 2011), 280.

67. Pettitt and Bahn, “Current Problems,” 134.

68. One difficulty with this argument is that some of the Swabian Jura figurines may be Magdalenian or Gravettian rather than Aurignacian (see Bahn, *Images of the Ice Age*, 152–53 and references, and Jouve, “L’attribution culturelle des sculptures du Jura souabe,” 64).

69. Oscar Moro Abadía and Manuel R. González Morales, “Thinking about ‘Style’ in the ‘Post Stylistic Era’: Reconstructing the Stylistic Context of Chauvet,” *Oxford Journal of Archaeology* 26 (2007): 109–25. See also April Nowell and Geneviève von Petzinger, “A Question of Style: Reconsidering the Stylistic Approach to Dating Paleolithic Parietal Art in France,” *Antiquity* 85 (2011): 1165–83.

70. Paul G. Bahn and J. Vertut, *Journey through the Ice Age* (Berkeley: University of California Press, 1997), 72–73.

71. Nowell and von Petzinger, “A Question of Style,” 1181.

72. Robert-Lamblin, “An Anthropological View,” in Clottes, ed., *Chauvet Cave*, 200.

73. Ibid., 202.

74. Ibid., 202–3.

75. André Leroi-Gourhan, “Le Préhistorien et le Chamane,” *Revue de la Société d’Ethnographie* 74, no. 5 (1977): 23–24. He mentioned the mistress of the buffalo from plains Indians cultures; Sedna, the Inuit mother of the sea, keeping the seals safe; Orpheus charming the creatures of the Underworld to obtain Eurydice (and then lose her); and Mithra and the slaying of the bull in the cave. One might add the “philosophical myths” of the *Gorgias* and the *Republic*, which indicated a reflective distance and thus a more differentiated consciousness than mythic immediacy, but which still preserved the primary experience of the cosmos.

76. M. Taussig, *Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing* (Chicago: University of Chicago Press, 1987), 146.

77. See, for example, G. Flaherty, “The Performance Artist as the Shaman for Higher Civilization,” *Modern Language Notes* 103 (1988): 519–39; M. Harner, *The Way of the Shaman* (New York: Bantam, 1982).

78. See Andrzej Rozwadowski, “Sun Gods or Shamans? Interpreting the ‘solar-headed’ petroglyphs of Central Asia,” in *The Archeology of Shamanism*, ed. R. N. Price (London: Routledge, 2001), 65–86; Charles Lindblom, s.v. “Shaman, Shamanism,” in *The Dictionary of Anthropology*, ed. T. Barfield (Oxford: Blackwell, 1997), 424–25.

79. See G. Devereux, “Shamans as Neurotics,” *American Anthropologist* 63 (1961): 1088–90; J. Silverman, “Shamanism and Acute Schizophrenia,” *American Anthropologist* 69 (1967): 21–31, and literature cited.

80. David S. Whitley, *Cave Paintings and the Human Spirit: The Origins of Creativity and Belief* (Amherst, NY: Prometheus Books, 2009), 210–12, 257.

81. R. Noll, “Shamanism and Schizophrenia: A State-Specific Approach to the ‘Schizophrenia Metaphor’ of Shamanic States,” *American*

Ethnology 10 (1983): 443–59.

82. Jane Monnig Atkinson, "Shamanisms Today," *Annual Review of Anthropology* 21 (1992): 309.

83. The connection between mystic visions and intoxicants has a long and respectable lineage. William James, for example, remarked, "The sway of alcohol over mankind is unquestionably due to its power to stimulate the mystical faculties of human nature. . . . It brings its votary from the chill periphery of things to the radiant core. It makes him for the moment one with truth"; James, *Varieties of Religious Experience* (London: Longmans Green, 1902), 397. On the other hand, as Zaehner more soberly remarked: "To the average frequenter of cocktail parties this may come as a revelation. That there is a grain of truth in it may be conceded, but to state that by drinking three or four gin-and-tonics the drinker becomes 'one with truth' would surprise no one more than the drinker himself"; R. C. Zaehner, *Drugs, Mysticism and Make-Believe* (London: Collins, 1972), 48.

84. Marlene Dobkin de Rios, *Hallucinogens: Cross-Cultural Perspectives* (Albuquerque: University of New Mexico Press, 1984).

85. Alice B. Kehoe, "Eliade and Hultkrantz: The European Primitivist Tradition," in *Shamanism: Critical Concepts in Sociology*, ed. Andre Znamenski (London: Routledge Curzon, 2004), 3:262, 268.

86. Mircea Eliade, *Shamanism: Archaic Techniques of Ecstasy*, trans. Willard R. Trask, Bollingen Series 76 (New York, Pantheon, 1964). Anna-Leena Siikala said Eliade's approach "has remained unknown among the anthropologists" (Siikala, "The Interpretation of Siberian and Central Asian Shamanism," in Znamenski, ed., *Shamanism*, 173). It is probably fair to say that archeologists have simply ignored or dismissed Eliade's arguments and the assumptions from which they were developed. See Alice Beck Kehoe, *Shamans and Religion: An Anthropological Exploration in Critical Thinking* (Prospect Heights, IL: Waveland Press, 2000); Guilford Dudley III, *Religion on Trial: Mircea Eliade and His Critics* (Philadelphia: Temple University Press, 1977); Brian Rennie, *Reconstructing Eliade: Making Sense of Religion* (Albany: SUNY Press, 1996); John A. Saliba, *"Homo religiosus" in Mircea Eliade* (Leiden: Brill, 1976); Homayun Sidky, "On the Antiquity of Shamanism and Its Role in Human Religiosity," *Method and Theory in the Study of Religion* 22 (2010): 68–92.

87. Eliade, *Shamanism*, 4.

88. Ibid., 8.

89. Ibid., xix.

90. Ibid., 24, 401. We will consider the issue of the "difficult way" below. The fraudulence of the "easy way" was confirmed by the Oxford scholar of comparative religion R. C. Zaehner many years ago in connection with Aldous Huxley's famous experiments with mescaline; see Zaehner, *Mysticism Sacred and Profane: An Inquiry into Some Varieties of Praeternatural Experience* (Oxford: Oxford University Press, 1957). Mescaline, he reported, mostly made him laugh and giggle.

91. Eliade, *Shamanism*, 27. See also Joan Halifax, *Shamanism: The*

Wounded Healer (New York: Crossroad, 1982).

92. See Bruce G. Trigger, *A History of Archeological Thought*, 2nd ed. (Cambridge: Cambridge University Press, 2007), 474.

93. Kehoe, *Shamans and Religion*, 1.

94. In contrast, for example, in political science the term "religion" refers first to the *religare* of Roman political practice, the sense of being tied together and tied back to the founding of "eternal" Rome (see Cicero, *De re publica* 3.23; Livy, *Annales* 43.13. In other words, the same word can have quite different meanings depending on the scientific context of its use. The same is true with the anthropological use of the term "ideology" to mean belief.

95. Kehoe, *Shamans and Religion*, 40.

96. Mircea Eliade, *Autobiography*, Vol. 1, *1937–1960*, trans. Mac Linscott Ricketts (Chicago: University of Chicago Press, 1981), 117; quoted also in Kehoe, *Shamanism and Religion*, 38.

97. Kehoe, *Shamanism and Religion*, 39.

98. See Barry Cooper, *The End of History: An Essay on Modern Hegelianism* (Toronto: University of Toronto Press, 1984), for a case study of a thoroughly modern thinker, namely Hegel, who "reverted to an earlier condition," namely, magic, thereby abandoning the insights attained by the philosophers, namely, Plato and Aristotle.

99. Eliade, *Shamanism*, 12; also quoted in Kehoe, *Shamanism and Religion*, 41.

100. Robert Layton, "Shamanism, Totemism and Rock Art: *Les Chamanes de la Préhistoire* in the Context of Rock Art Research," *Cambridge Archaeological Journal* 10 (2000): 169–70. Or, as Piers Vitebsky put it, Eliade built a "composite picture" based on diverse examples of shamanic and analogous practices; Vitebsky, *The Shaman: Voyages of the Soul* (London: Macmillan, 1995), 116.

101. A. Hultkrantz, "Ecological and Phenomenological Aspects of Shamanism," in *Shamanism in Siberia*, ed. V. Dioszegi and M. Hoppal (Budapest: Akadémiai Kiado, 1978), 43.

102. Znamenski, ed., *Shamanism*, 243–60.

103. Claude Lévi-Strauss, "The Sorcerer and His Magic," in *Structural Anthropology* (New York: Basic Books, 1963), 1:175–85. The original report was provided by Franz Boas in 1930.

104. Ibid., 180.

105. Johann Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (Boston: Beacon, 1955), 139.

106. Ibid., 1.

107. Eliade, *Shamanism*, 182. To which A. Hultkrantz added the roles of diviner, magician, and priest. See Hultkrantz, "Ecological and Phenomenological Aspects of Shamanism," 27–58.

108. Eliade, *Shamanism*, 259.

109. I have discussed this question in connection with the relatively differentiated symbolism of Plato in Barry Cooper, "'A Lump bred up in Darknesse,' Two Tellurian themes in the *Republic*," in *Politics, Philosophy,*

Writing: Plato's Art of Caring for Souls, ed. Zdravko Planinc (Columbia: University of Missouri Press, 2001), 80–121. The inhabitants of Toronto, for example, routinely and playfully refer to their city as the center of the universe. They look upon the *axis mundi* of the CN Tower as proof—as if proof, in such self-evident matters, were needed!

110. *Shamanism*, 265. See also E. A. S. Butterworth, *The Tree at the Navel of the Earth* (Berlin: De Gruyter, 1970), 172–80.

111. Hultkrantz, "Ecological and Phenomenological Aspects of Shamanism," 41–42.

112. Salomon Reinach, "L'Art et la Magie: À propos des Peintures et des Gravures de l'Âge du Renne," *L'Anthropologie* 14 (1903): 257–66. Reinach, however, drew on German sources and the Germans, in turn, relied on their own ethnographic studies of Siberian shamans (along with the studies of their Russian colleagues); see Silvia Tomášková, *Wayward Shamans: The Prehistory of an Idea* (Berkeley: University of California Press, 2013), chap. 4.

113. Horst Kirchner, "Ein archäologicher Beitrag zur Urgeschichte des Shamanisimus," *Anthropos* 47 (1952): 244–86. See also Weston La Barre, "Hallucinogens and the Shamanic Origin of Religion," in *Flesh of the Gods: The Ritual Use of Hallucinogens*, ed. P. Furst (London: George Allen and Unwin, 1972).

114. Clottes, *Voyage en Préhistoire*, 7, 36–37.

115. Clottes, "Review of Lewis-Williams' *A Cosmos in Stone*," *South African Archaeology Bulletin* 58 (2003): 98.

116. J. D. Lewis-Williams, "Southern African Rock Art and Beyond: A Personal Perspective," *Time and Mind: The Journal of Archaeology, Consciousness and Culture* 6 (2013): 42.

117. J. D. Lewis-Williams, *A Cosmos in Stone: Interpreting Religion and Society through Rock Art* (New York: Rowman and Littlefield, 2002), 49, see also 133, 167. This volume collected, amplified, and occasionally modified several papers Lewis-Williams published between 1972 and 1997.

118. Lewis-Williams, "Southern African Rock Art and Beyond," 43; Lewis-Williams, *A Cosmos in Stone*, 51–52. The question of "fit" or "best fit" was borrowed from Carl Hempel, a mid-twentieth-century philosopher of science. The "best-fit hypothesis" was translated into French as "l'hypothèse la plus plausible"; see Jean Clottes and David Lewis-Williams, "Transe ou pas Transe: Réponse à Roberte Hamayon," *Les Nouvelles de l'Archéologie* 69 (1997): 47.

119. Lewis-Williams, *A Cosmos in Stone*, 94. This chapter was originally written in 1974. See also his 1977 thesis, Lewis-Williams, *Believing and Seeing: Symbolic Meanings in Southern San Rock Paintings* (London: Academic Press, 1981), and Lewis-Williams, *Stories That Float from Afar: Ancestral Folklore of the San of Southern Africa* (Cape Town: David Philip, 2000).

120. See Colin Renfrew, "Towards a Cognitive Archaeology," in *The Ancient Mind: Elements of Cognitive Archaeology*, ed. Renfrew and Ezra B.

W. Zubow (Cambridge: Cambridge University Press, 1994), 3–12.

121. Lewis-Williams, *A Cosmos in Stone*, 134, 161.

122. Lewis-Williams, "South African Rock Art," 47–48. The later books, which we do not discuss in detail, drew on the Upper Paleolithic studies. See Lewis-Williams, *The Mind in the Cave: Consciousness and the Origin of Art* (London: Thames and Hudson, 2002); Lewis-Williams and David Pearce, *Inside the Neolithic Mind: Consciousness, Cosmos, and the Realm of the Gods* (London: Thames and Hudson, 2005); Lewis-Williams, *Conceiving God: The Cognitive Origins and Evolution of Religion* (London: Thames and Hudson, 2010). His concern with "social change" reflected a residual Marxism.

123. David Lewis-Williams and Thomas Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Paleolithic Art," *Current Anthropology* 29 (1988): 201–45. The authors were on this occasion too polite to mention either Breuil or Leroi-Gourhan. They did refer to Alison Wylie, "The Reaction against Analogy," *Advances in Archaeological Method and Theory* 8 (1985): 63–111.

124. The authors also looked at the shamanic practices of the Shoshonean Coso and their rock art in the Great Basin. Here they relied chiefly on the work of David Whitley.

125. Lewis-Williams and Dowson, "The Signs of All Times," 201–2. As Lewis-Williams wrote a few years later, these "mental states" were both physiological and "as integral to the human body as, say, the digestive system" because they were simply "the product of the human brain" (Lewis-Williams, *Conceiving God*, 158). Even if we ignore the recent discovery of neuroplasticity, there was plenty of evidence available at the time that oral and literate cultures result in different "mental states," to say nothing of the question of compact and differentiated consciousness.

126. Lewis-Williams and Dowson, "The Signs of All Times," 213.

127. Ibid., 234–38.

128. Lewis-Williams, *A Cosmos in Stone*, 167. As in his earlier work, Lewis-Williams again distinguished between an empirical approach in the sense of considering data in all its complexity and in the widest possible context and "empiric*ism*," which meant granting significance and methodological priority to data-collection, which he previously described as "an enormous waste of time and energy."

129. David Lewis-Williams and Thomas Dowson, "Through the Veil: San Rock Paintings and the Rock Face," *South African Archaeological Bulletin* 45 (1990): 5–16. This article was republished without significant change in Lewis-Williams, *A Cosmos in Stone*, 95–117.

130. Ibid., 5.

131. E. Cartailhac and H. Breuil, *La Caverne d'Altamira à Santillane, prés Santander (Espagne)* (Monaco: Imprimerie de Monaco, 1906), 229; Michel Lorblanchet, *Art Pariétal: Grottes Ornées du Quercy* (Rodez: Rouergne, 2010), 401.

132. Ibid., 7.

133. Lewis-Williams and Dowson, "Through the Veil," 15. The image of a "painted veil" was taken from Shelley's sonnet "Lift not the painted veil."

134. Lewis-Williams, *A Cosmos in Stone*, 171–72.

135. Initially they thought of publishing an article together. In 1996, their book appeared in French; two years later an English version was published: Jean Clottes and David Lewis-Williams, *The Shamans of Prehistory: Trance and Magic in the Painted Caves*, trans. Sophie Hawkes (New York: Harry N. Abrams, 1998); quote at 9.

136. Ibid., 10, 29, 86, 81.

137. Ibid., 91.

138. Ibid., 92.

139. See Margaret W. Conkey, "The Identification of Prehistoric Hunter-Gatherer Aggregation Sites: The Case of Altamira," *Current Anthropology* 21 (1980): 609–30.

140. Clottes and Lewis-Williams, *The Shamans of Prehistory*, 106.

141. Ibid., 114.

142. See, for example, Lewis-Williams, *The Mind in the Cave*, 8.

143. Lewis-Williams, *Conceiving God*, 23, 27, 117, 131.

144. Eric Voegelin, *The New Science of Politics* (Chicago: University of Chicago Press, 1952), 5. Such an Aristotelean understanding of science provides yet another example of the commonplace (we noted above) that political science reverts to an earlier condition to obtain greater insight.

145. Lewis-Williams, *The Mind in the Cave*, 104.

146. Clottes and Lewis-Williams, *The Shamans of Prehistory*, 13–14.

147. We focus on the criticisms of paleoscientists. The "model" has also been criticized by systems-theorists. See Tom Froese, Alexander Woodward, and Takashi Ikegami, "Turing Instabilities in Biology, Culture, and Consciousness? On the Enactive Origins of Symbolic Material Culture," *Adaptive Behavior* 21 (2013): 199–214.

148. Paul Bahn, "Comments," *Current Anthropology* 29 (1988): 217–18.

149. At one point Bahn attempted something similar, linking some of the imagery in some of the caves "to the veneration of water"; see Bahn, "Water Mythology and the Distribution of Paleolithic Parietal Art," *Proceedings of the Prehistoric Society* 44 (1978): 125–34.

150. In 1992, Bahn lent qualified support to the approach of Noel W. Smith, *An Analysis of Ice Age Art: Its Psychology and Belief System* (New York: Peter Lang, 1992), foreword, ix.

151. Bahn, *Images of the Ice Age*, 290.

152. The first was scheduled to appear in 1997 in Paul G. Bahn, *The Cambridge Illustrated History of Prehistoric Art* (Cambridge: Cambridge University Press, 1998), 235–47. The second was Bahn, "Membrane and Numb Brain: A Close Look at the Recent Claim for Shamanism in Paleolithic Art," *Rock Art Research* 14 (1997): 62–68. In "Membrane and Numb Brain," Bahn made many of the same observations as he did in the book, and in his article he cited the book as appearing in 1997, not 1998.

153. Thomas Dowson, review of *The Hunter's Vision*, by Peter Garlake, *Antiquity* 70 (1996): 469.

154. Bahn, "Membrane and Numb Brain," 63–64.

155. This "Popperian" question was initially raised by Alison Wylie in her comments on Lewis-Williams and Dowson, "The Signs of All Times," *Current Anthropology* 22 (1988): 232.

156. Bahn, *Cambridge Illustrated History of Prehistoric Art*, 242–43.

157. J. D. Lewis-Williams and Jean Clottes, "Shamanism and Upper Paleolithic Art: A Response to Bahn," *Rock Art Research* 15 (1998): 46–50. This seemed to be a regular response to critics, even mild dissenters. See, for example, Yvette Taborin, "Les Interprétations de l'Art paléolithique," *Archéologia* 356 (2000): 52–61, and their response, Lewis-Williams and Clottes, "Chamanisme et l'Art parietal paléolithique: Réponse à Yvette Taborin," *Archéologia* 368 (2000): 6–7.

158. The proceedings were published a few years later as *The Concept of Shamanism: Uses and Abuses*, ed. Henri-Paul Francfort and Roberte N. Hamayon, with the collaboration of Paul G. Bahn (Budapest: Akadémiai Kiadó, 2001).

159. Ibid., 51–93. See also Michel Lorblanchet, "Encounters with Shamanism," in ibid., 95–115.

160. Bahn, "Save the Last Trance," 83.

161. Lewis-Williams and Dowson, "The Signs of All Times," 203–4.

162. Bahn, "Save the Last Trance," 54.

163. Ibid., 55. See also Michael Perrin, *Le Chamanisme* (Paris: Presses Universitaires de France, 1995), 44. Roberte N. Hamayon, "Are 'Trance,' 'Ecstasy' and Similar Concepts Appropriate in the Study of Shamanism?," in Francfort and Hamayon, eds., *The Concept of Shamanism*, 47.

164. Bahn, "Save the Last Trance," 81. On Bahn's "pessimism," see Christopher Chippindale, "Current Issues in the Study of Paleolithic Images," *American Journal of Archaeology* 103 (1999): 103–4.

165. Bahn, "Save the Last Trance," 76.

166. Ibid., 77–78.

167. Bahn, *Cambridge Illustrated History of Prehistoric Art*, 242–46. In this context, Dowson's splenetic review of Bahn's book is amusing; Dowson, review of *The Cambridge Illustrated History of Prehistoric Art*, by Paul Bahn, *Antiquity* 72 (1998): 715–17.

168. Bahn, "Save the Last Trance," 77–78, 85. Kehoe, *Shamans and Religion*, 72, 94.

169. Paul Bahn and Patricia A. Helvenston, *Desperately Seeking Trance Plants* (New York: RJ Communications, 2002). It was republished as chapter 1 of Helvenston and Bahn, *Waking the Trance Fixed* (Louisville, KY: Wasteland Press, 2005). References are to this source.

170. Patricia A. Helvenston and Paul Bahn, "Testing the 'Three Stages of Trance' Model," *Cambridge Archaeological Journal* 13 (2003): 213–24.

171. Christopher Chippindale, "Trying to Test a Trance Hypothesis in its Social Context," *Cambridge Archaeological Journal* 13 (2003): 219.

172. Chippindale, review of *Prehistoric Rock Art*, by Paul G. Bahn,

Cambridge Archaeological Journal 21 (2011): 320. Elsewhere he referred to Bahn as "ubiquitous commentator"; Chippindale, "Visionary Experience and the Archaeology of Rock Art," *Cambridge Archaeological Journal* 13 (2003): 130.

173. Jean Clottes, "Hallucination in Caves," *Cambridge Archaeological Journal* 14 (2004): 81; Helvenston and Bahn, "Waking the Trance-Fixed," in ibid., 98. This short paper, a response to Clottes, Pearce, and Wilson, is not to be confused with the short book of the same name, cited above as *Waking the Trance Fixed*.

174. David Pearce, "'Testing' and Altered States of Consciousness in Upper Paleolithic Art Research," *Cambridge Archaeological Journal* 14 (2004): 82–83. Helvenston and Bahn, "Waking the Trance-Fixed," 94.

175. David Wilson, "People Talk about Heaven . . . ," *Cambridge Archaeological Journal* 14 (2004): 89; Helvenston and Bahn, "Waking the Trance-Fixed," 90–95.

176. Helvenston and Bahn, "Waking the Trance-Fixed," 95. Helvenston did not become aware of the application of the TST model until 2001, when she listened to a talk by David Whitley on the art in Chauvet cave. She told him that she had never had a patient who even described anything like the TST experience. Whitley "replied that this is what psychologists were telling the proponents of this model, but that they [the proponents] chose to ignore them," which "caused her considerable consternation," as well it might. She then began her research on the sources used by Lewis-Williams, Dowson, and Whitley and discovered many errors and misrepresentations of sources (Helvenston and Bahn, *Waking the Trance Fixed*, 5–6).

177. J. D. Lewis-Williams, "Neuropsychology and Upper Paleolithic Art: Observations on the Progress of Altered States of Consciousness," *Cambridge Archaeological Journal* 14 (2004): 107–11.

178. See p. 214 in the *CAJ* version and pp. 22–24 of *Desperately Seeking Trance Plants*, reprinted as chap. 1 of *Waking the Trance Fixed*.

179. Helvenston and Bahn, *Waking the Trance Fixed*, 65.

180. Lewis-Williams, "Neuropsychology and Upper Paleolithic Art," 108; her qualifications were described in Helvenston and Bahn, *Waking the Trance Fixed*, 6, which Lewis-Williams purported to have read. See also Cecelia F. Klein and Maya Stanfield-Mazzi, "Reply" to Lewis-Williams, "On Sharpness and Scholarship in the Debate on 'Shamanism,'" *Current Anthropology* 45 (2004): 405.

181. Lewis-Williams, *The Mind in the Cave*, 266; Clottes, review of *The Mind in the Cave*, *Bulletin de la Société Préhistorique Ariège-Pyrénées* 57 (2002): 297–99.

182. Françoise Audouze and Nathan Schlanger, "Introduction Générale: Singularité et Diversité," in *Autour de l'Homme: Contexte et Actualité d'André Leroi-Gourhan*, ed. Audouze and Schlanger (Antibes: Éditions APDCA, 2004), 21.

183. Morris Janowitz, "Anthropology and the Social Sciences," *Current Anthropology* 4 (1963): 151.

184. See, for example, Denis Vialou, *L'Art des Grottes en Ariège magdalénienne* (Paris: CNRS, 1986), or Georges Sauvet and André Wlodarczyk, "Towards a Formal Grammar of the European Paleolithic Cave Art," *Rock Art Research* 25 (2008): 165–72. On "fashions" in French archaeology, see Jean Clottes, "Phénomènes de Mode dans l'Archéologie française," in *The Limitations of Archaeological Knowledge*, ed. Talia Shay and Jean Clottes (Liège: Études et Recherches Archéologiques de l'Université de Liège, No. 49, 1992), 225–45.

185. The collected responses of Jean Clottes and David Lewis-Williams, "After the *Shamans of Prehistory: Polemics and Responses*," in *Talking with the Past: The Ethnography of Rock Art*, ed. James D. Keyser, George R. Poetschat, and Michael W. Taylor (Portland: Oregon Archaeological Society, 2006), 100–142, were decidedly nonresponsive.

186. Jean Clottes and David Lewis-Williams, "Paleolithic Art and Religion," in *A Handbook of Ancient Religions*, ed. John R. Hinnells (Cambridge: Cambridge University Press, 2007), 7–45.

187. Andrew J. Lawson, *Painted Caves: Paleolithic Rock Art in Western Europe* (Oxford: Oxford University Press, 2012), 223–27.

188. Hamayon, "La Transe d'un Préhistorien: À propos du livre de Jean Clottes et David Lewis-Williams," *Les Nouvelles de l'Archéologie* 67 (1997): 65–67.

189. Jean Clottes and David Lewis-Williams, "Transe ou pas Transe: Réponse à Roberte Hamayon," *Les Nouvelles de l'Archéologie* 69 (1997): 45–47.

190. Jarl Nordbladh, "San Rock Art, Ethnography and Neuropsychology: Lewis-Williams' Interpretive Approach," *Journal of Southern African Studies* 31 (2005): 240.

191. Thomas Dowson, "Debating Shamanism in Southern African Rock Art: Time to Move On . . . ," *South African Archaeological Bulletin* 62 (2007): 49–61.

Chapter 7

1. Marshack, "Upper Paleolithic Symbol Systems of the Russian Plain: Cognitive and Comparative Analysis," *Current Anthropology* 20 (1979): 271–95; Christensen, "Comments," 295–98, and Marshack, "Reply," 303–9, in ibid.

2. See André Leroi-Gourhan, *The Art of Prehistoric Man in Western Europe*, trans. N. Guterman (London: Thames and Hudson, 1968), 392.

3. Christensen, "Comments," 296.

4. Marshack, "Upper Paleolithic Symbol Systems," 304.

5. Henri Bégouën, *Les Précurseurs Toulousains de la Préhistoire* (Toulouse: Éditions UATA, 1935), 11.

6. Bahn, *Cambridge Illustrated History of Prehistoric Art*, 247.

7. Jean Clottes, *Cave Art* (London: Phaidon, 2008), 22.

8. Marie König, *Unsere Vergangenheit ist älter: Höhlencult Alt-Europas* (Frankfurt: Fischer Verlag, 1980).

9. Alexander Marshack, "Evolution of the Human Capacity: The Symbolic Evidence," *Yearbook of Physical Anthropology* 32 (1989): 16. For an orthodox archaeologist such as Paul Mellars, the Tata plaque was simply "enigmatic"; see Mellars, *The Neanderthal Legacy* (Princeton, NJ: Princeton University Press, 1996), 375.

10. André Leroi-Gourhan, *Treasures of Prehistoric Art*, trans. Norbert Guterman (New York: Abrams, 1967), 44, 216, 300–306.

11. Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000), 390.

12. Ian Tattersall, "Human Origins: Out of Africa," *Proceedings of the National Academy of Science USA* 106 (September 2009): 16020.

13. Ian Tattersall, "An Evolutionary Framework for the Acquisition of Symbolic Cognition by *Homo sapiens*," *Comparative Cognition and Behavior Reviews* 3 (2008): 111.

14. See Stephen W. Edwards, "Nonutilitarian Activities in the Lower Paleolithic: A Look at Two Kinds of Evidence," *Current Anthropology* 19 (1978): 135–37, who argued that evidence for activities transcending biological needs can be attributed to Acheulean peoples ca. 700 KYA. See also Alexander Marshack, "On Paleolithic Ochre and the Early Uses of Color and Symbol," *Current Anthropology* 22 (1981): 188–90.

15. Roger Scruton, *The Soul of the World* (Princeton, NJ: Princeton University Press, 2014), 100.

16. Ann Sieveking, *The Cave Artists* (London: Thames and Hudson, 1979), 13, 207–9.

17. Steven Mithen, introduction to *Creativity in Human Evolution and Prehistory*, ed. Steven Mithen (London: Routledge, 1998), 7–8.

18. Clottes, *Cave Art*, 25.

19. Brendan Purcell, *From Big Bang to Big Mystery* (Dublin: Veritas, 2011), 98.

20. Paul G. Bahn, *Images of the Ice Age* (Oxford: Oxford University Press, 2016), 331, 335.

21. Paul G. Bahn, *Prehistoric Rock Art: Polemics and Progress* (Cambridge: Cambridge University Press, 2010), 135.

22. Michel Lorblanchet, "From Man to Animal and Sign in Paleolithic Art," in *Animals into Art*, ed. Howard Murphy (London: Unwin Hyman, 1989), 110.

23. Bahn, *Prehistoric Rock Art*, 147; Iégor Reznikoff and Michel Dauvois, "La Dimension sonore des Grottes ornées," *Bulletin de la Société préhistorique française* 85 (1988): 238–46; Steven J. Waller, "Sound Reflection as an Explanation for the Content and Context of Rock Art," *Rock Art Research* 10 (1993): 91–101; Robert N. Bellah, *Religion in Human Evolution: From the Paleolithic to the Axial Age* (Cambridge, MA: Belknap Press of Harvard University Press, 2011), 174.

24. William H. McNeill, *Keeping Together in Time: Dance and Drill in Human History* (Cambridge, MA: Harvard University Press, 1995), 13, 23, 27, 31.

25. Leroi-Gourhan, *Treasures of Prehistoric Art*, 164, 198; Paul G.

Bahn, "Location, Location: What Can the Positioning of Cave and Rock Art Reveal about Ice Age Motivations?," in *Cave Art and Space: Archaeological and Architectural Perspectives*, ed. A. Pastoors and G. C. Weniger (Mettmann: Wissenschaftliche Schriften des Neandertal Museums, 2003), 11–20.

26. Michel Lorblanchet, *Art Pariétal: Grottes ornées du Quercy* (Rodez: Rouergue, 2010), 118. Likewise Leroi-Gourhan called the cave an "actor" and "participant" in the art.

27. Marcel Otte, "Paleolithic Mosaics," in *An Enquiring Mind: Studies in Honor of Alexander Marshack*, ed. Paul G. Bahn (Cambridge, MA: Peabody Museum, Harvard University, 2009), 229, 231.

28. Quoted in Bahn, *Images of the Ice Age*, 307.

29. Clottes, *Cave Art*, 20.

30. Michel Lorblanchet, *L'Art préhistorique du Quercy* (Portet-sur-Garonne: Loubatières, 2004), 48.

31. Lorblanchet, "From Man to Animal," 140.

32. Clayton Eshleman, *Juniper Fuse: Upper Paleolithic Imagination and the Construction of the Underworld* (Middleton, CT: Wesleyan University Press, 2003). The title refers to a juniper tree that had fallen over near the entrance to Lascaux cave; the tree's roots raised up a large clump of earth creating a pit that eventually led to the cave entrance. It refers also to the use of juniper branches as wicks in many of the hand lamps found in the cave.

33. Ibid., xvi. It was also at Combarelles that Eshleman discovered that Leroi-Gourhan's map of the cave "left out a number of figures" that were included in Breuil's earlier map; the figures were in fact on the walls. This omission, Eshleman said, "was designed to highlight material that supported his [Leroi-Gourhan's] overall theory" (ibid., 128). Even Homer nods.

34. M. A. Jochim, "Paleolithic Cave Art in Ecological Perspective," in *Hunter-Gatherer Economy in Prehistory*, ed. G. N. Bailey (Cambridge: Cambridge University Press, 1983), 215.

35. Eshleman, *Juniper Fuse*, 29.

36. Gregor J. Wightman, *The Origin of Religion in the Paleolithic* (Lanham, MD: Rowman and Littlefield, 2015), 76.

37. Eshleman, *Juniper Fuse*, 46.

38. Ibid., 86.

39. Ibid., xviii, 130–32, 136.

40. Ibid., 136.

41. Eshleman used the term hybrid in its etymological sense of the offspring of a tame sow and a wild boar (*Juniper Fuse*, 150–51). On hunting as a mediation of wildness and civility, see also Matt Cartmill, *A View to a Death in the Morning: Hunting and Nature through History* (Cambridge: Cambridge University Press, 1993), 32–36.

42. Matt J. Rossano, "Did Meditation Make Us Human?," *Cambridge Archaeological Journal* 17 (2004): 45–58.

43. Eshleman, *Juniper Fuse*, 154.

44. Ibid., 223.

45. See Weston La Barre, "Materials for a History of Studies of Crisis Cults: A Bibliographic Essay," *Current Anthropology* 12 (1971): 3–44; see also his application of the concept to the Paleolithic caves in La Barre, *The Ghost Dance: Origins of Religion* (New York: Delta, 1970), 353–55, 395–400. C. Michael Barton, G. A. Clark, and Alison E. Cohen, "Art as Information: Explaining Upper Paleolithic Art in Western Europe," *World Archaeology* 26 (1994): 185–207, note that the appearance of parietal art in Western Europe was "a monitor of demographic stress," such as "the closing of social networks under conditions of increasing population density" coupled to more or less constant carrying capacity (199).

46. Voegelin, *New Science of Politics*, 2.

47. Otte, "Paleolithic Mosaics," 232.

48. Eric Voegelin, "Anxiety and Reason," in *What Is History? And Other Late Unpublished Writings*, ed. Thomas A. Hollweck and Paul Caringella (Baton Rouge: Louisiana State University Press, 1990), *CWEV* 28:71.

Appendix

1. John Zammito, *Kant, Herder and the Birth of Anthropology* (Chicago: University of Chicago Press, 2002), 3.

2. See Kant's "Third Proposition," in *Idea for a Universal History with a Cosmopolitan Aim* (1784), in *Immanuel Kant: Anthropology, History and Education*, ed. Günter Zöller and Robert B. Louden (Cambridge: Cambridge University Press, 2007), 110–11.

3. See Voegelin's remarks on this problem in *The History of the Race Idea from Ray to Carus*, trans. Ruth Hein, ed. Klaus Vondung (Baton Rouge: Louisiana State University Press, 1998), *CWEV* 3:154–58.

4. *Immanuel Kant's Critique of Pure Reason*, trans. Norman Kemp Smith (London: Macmillan, 1983). Subsequent page numbers are given in the text using the now standard references of "A" and "B" to refer to the first and second editions. See also Allen W. Wood, "Kant and the Problem of Human Nature," in *Essays on Kant's Anthropology*, ed. Brian Jacobs and Patrick Kain (Cambridge: Cambridge University Press, 2003), 38.

5. Kant, "Review of Herder's *Ideas*," in Zöller and Louden, eds., *Anthropology, History and Education*, 131–32.

6. Immanuel Kant, *Critique of the Power of Judgement*, ed. Paul Guyer, trans. Paul Guyer and Eric Matthews (Cambridge: Cambridge University Press, 2000), sec. 10, p. 105.

7. Daniel Kolb, "Kant, Teleology and Evolution," *Synthèse* 91 (1992): 10.

8. *Critique of the Power of Judgement*, sec. 75, pp. 270–71.

9. As David Walsh pointed out, Hegel rather than Kant understood explicitly that "purpose is not something we insert into nature but what the understanding of nature, which cannot understand itself, necessarily,

is. Nature is spiritualized, and understanding arises within nature. We do not impose a meaning on nature but discover nature as a movement toward the reality of spirit. . . . Nature is not an object but part of the whole that includes spirit and in terms of which it must be understood"; Walsh, *The Modern Philosophical Revolution: The Luminosity of Existence* (Cambridge: Cambridge University Press, 2008), 117.

10. *Critique of the Power of Judgement*, sec. 83, p. 298.

11. Holly L. Wilson, *Kant's Pragmatic Anthropology: Its Origin, Meaning and Critical Significance* (Albany: SUNY Press, 2006), 71.

12. Voegelin, *The History of the Race Idea*, 128–29.

13. *Critique of the Power of Judgement*, sec. 80, p. 287.

14. James L. Larson, *Interpreting Nature: The Science of Living Form from Linnaeus to Kant* (Baltimore: Johns Hopkins University Press, 1994), 173.

15. *Critique of the Power of Judgement*, sec. 80, p. 288.

16. Zammito, "'This inscrutable *principle* of and original *organization*': Epigenesis and 'looseness of fit' in Kant's Philosophy of Science," *Studies in History and Philosophy of Science* 34 (2003): 79–80.

17. *Critique of the Power of Judgement*, 288n. Marx foolishly and dogmatically disagreed; see Karl Marx, "Private Property and Communism," in *Early Writings*, trans. and ed. T. B. Bottomore (London: Watts, 1963), 165.

18. Voegelin, *The History of the Race Idea*, 144.

19. Ibid.

20. Ibid., 149.

21. Scruton, *The Soul of the World*, 5.

22. Voegelin, *The History of the Race Idea*, 19.

23. Ibid., 20.

24. Ibid.

25. See Meins G. S. Coetseir, "Between Realities: Dawkins vs. Voegelin," *Modern Age* 51 (2009): 225.

26. When, with the help of a book on cultural anthropology, someone discovers herself as a "Nordic" or even an "Aryan" person, the result is a grotesque political problem. Ignoring the historicity of the individual means substituting physiology or morphology for it. In reality, however, physiological descent does not constitute history.

27. Eric Voegelin, "The Origins of Scientism," in *Published Essays, 1940–1952*, ed. E. Sandoz (Columbia: University of Missouri Press, 2000), *CWEV* 10:168–96. The term itself was introduced by F. A. von Hayek a few years earlier; see Hayek, "Scientism and the Study of Society," *Economica* 9, no. 32 (1942): 267–82; 10, no. 37 (1943): 34–50; and 11, no. 41 (1944): 27–41. See also the discussion by Brendan Purcell of the "fallacy of answering the unasked question," in Purcell, *The Drama of Humanity: Towards a Philosophy of Humanity in History* (Frankfurt: Peter Lang, 1996), 29–32, and Purcell, *From Big Bang to Big Mystery: Human Origins in the Light of Creation and Evolution* (Dublin: Veritas, 2011), 99–102.

28. Voegelin, “The Origins of Scientism,” 169.

29. Voegelin, “Phenomenalism,” in *The New Order and Last Orientation*, Vol. 7 of *History of Political Ideas*, ed. Jürgen Gebhardt and Thomas A. Hollweck (Columbia: University of Missouri Press, 1999), *CWEV* 25:178–92. See also Barry Cooper, *Eric Voegelin and the Foundations of Modern Political Science* (Columbia: University of Missouri Press, 1999), 108–18.

30. See also Stephen Jay Gould, *Ontogeny and Phylogeny* (Cambridge, MA: Harvard University Press, 1977), chap. 3.

31. Voegelin, *The History of the Race Idea*, 19–20.

32. Voegelin, *Race and State*, trans. Ruth Hein, ed. Klaus Vondung (Baton Rouge: Louisiana State University Press, 1997), *CWEV* 2:38–39.

33. Ibid., 39. Voegelin’s interpretation of Darwin’s assumptions and his appeal to liberal emotions was hardly idiosyncratic. On the first problem, see Marjorie Grene and David Depew, *The Philosophy of Biology: An Episodic History* (Cambridge: Cambridge University Press, 2004), 198–201, 261–72; Kolb, “Kant, Teleology and Evolution,” 9–28; on Darwin’s appeal, see Robert M. Young, *Darwin’s Metaphor: Nature’s Place in Victorian Culture* (Cambridge: Cambridge University Press, 1985), or Adrian Desmond and James Moore, *Darwin’s Sacred Cause: Race, Slavery and the Quest for Human Origins* (London: Allen Lane, 2009), 147–51, 197–217, 367–76.

34. Gould had Richard Dawkins and Daniel Dennet in mind. See Stephen Jay Gould, “Darwinian Fundamentalists,” *New York Review of Books*, June 12, 1997, 34–37.

SELECTED BIBLIOGRAPHY

The bibliography includes the major works consulted. I have excluded, for example, much of the early work of Breuil as being chiefly of historical interest regarding his education as an archaeologist. I have also excluded material peripheral to the argument made in this book.

Abadía, Oscar Moro, and Manuel R. González Morales. "Thinking about 'Style' in the 'Post Stylistic Era': Reconstructing the Stylistic Context of Chauvet." *Oxford Journal of Archaeology* 26 (2007): 109–25.

Alcolea, González José Javier, and Rodrigo de Babín Behrmann. "C14 et Style: La Chronologie de l'Art pariétal à l'Heure actuelle." *L'Anthropologie* 111 (2007): 435–66.

Alpert, Barbara Oling. *The Creative Ice Age Brain: Cave Art in the Light of Neuroscience*. Santa Fe, NM: Foundation 20/21, 2008.

Anati, Emmanuel. "Quelques Réflections sur l'Art rupestre d'Europe." *Bulletin de la Société préhistorique française* 57 (1960): 692–712.

———, ed. *Valcamonica Symposium (1968)*. Capo di Ponte: Edizioni del Centro, 1970.

Arambourg, Camille. *La Genèse de l'Humanité*. Paris: Presses Universitaires de France, 1943.

Arendt, Hannah. *Men in Dark Times*. New York: Harcourt Brace and Company, 1968.

———. *On Violence*. New York: Harcourt, Brace and World, 1970.

Arnold, Bettina. "The Past as Propaganda: Totalitarian Archeology in Nazi Germany." *Antiquity* 64 (1990): 464–78.

Audouze, Françoise, and Nathan Schlanger, eds. *Autour de l'Homme: Contexte et Actualité d'André Leroi-Gourhan*. Antibes: Éditions APDCA, 2004.

Bahn, Paul G. *The Cambridge Illustrated History of Prehistoric Art*. Cambridge: Cambridge University Press, 1998.

———. "Comments." *Current Anthropology* 29 (1988): 217–18.

———. "Expecting the Spanish Inquisition: Altamira's Rejection in Its Nineteenth-Century Context." In *Ancient Images, Ancient Thought: The Archeology of Ideology*, *Proceedings of the 23rd Chacmool Conference, 1990*, 339–46. Calgary: University of Calgary Archaeology Association, 1992.

———. "Getting into the Groove." *Nature* 339 (June 1989): 429–30.

———. *Images of the Ice Age*. 3rd ed. Oxford: Oxford University Press, 2016.

———. “Location, Location: What Can the Positioning of Cave and Rock Art Reveal about Ice Age Motivations?” In *Cave Art and Space: Archaeological and Architectural Perspectives*, edited by A. Pastoors and G. C. Weniger, 11–20. Mettmann: Wissenschaftliche Schriften des Neandertal Museums, 2003.
———. “Membrane and Numb Brain: A Close Look at the Recent Claim for Shamanism in Paleolithic Art.” *Rock Art Research* 14 (1997): 62–68.
———. “No Sex, Please, We’re Aurignacians.” *Rock Art Research* 3 (1986): 99–120.
———. *Prehistoric Rock Art: Polemics and Progress*. Cambridge: Cambridge University Press, 2010.
———. “Putting a Brave Face on a Fake.” *Cambridge Archaeological Journal* 6 (1996): 309–10.
———, ed. *An Enquiring Mind: Studies in Honor of Alexander Marshack*. Cambridge, MA: Peabody Museum, Harvard University, 2009.
Bahn, Paul G., and Patricia Helvenston. *Desperately Seeking Trance Plants*. New York: RJ Communications, 2002.
Bahn, Paul G., and J. Vertut. *Journey through the Ice Age.* Berkeley: University of California Press, 1997.
Bahrami, Beebe. *Café Neandertal: Excavating Our Past in One of Europe’s Most Ancient Places.* Berkeley, CA: Counterpoint, 2017.
Bailey, G. N., ed. *Hunter-Gatherer Economy in Prehistory*. Cambridge: Cambridge University Press, 1983.
Barnard, Alan. *Language in Prehistory*. Cambridge: Cambridge University Press, 2016.
———, ed. *Hunter-Gatherers in History, Archaeology and Anthropology*. Oxford: Berg, 2004.
Barton, C. Michael, G. A. Clark, and Alison E. Cohen. “Art as Information: Explaining Upper Paleolithic Art in Western Europe.” *World Archaeology* 26 (1994): 185–207.
Baudet, J. L. “Les Industries des Grottes ornées de l’Île-de-France.” In *Congrès préhistorique de France*, Session 12, 119–31. Paris, 1950.
Bazin, G. *Histoire de l’Histoire de l’Art: De Vasari à nos Jours*. Paris: Albin Michel, 1986.
Bednarik, Robert G. “The Age of the Côa Petroglyphs: An Obituary to the Stylistic Dating of Paleolithic Rock-Art.” *Rock Art Research* 12 (1995): 878–81.
———. “Paleoart and Archeological Myths.” *Cambridge Archeological Journal* 2 (1992): 27–43.
Beer, Gillian. *Darwin’s Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction*. London: Routledge and Kegan Paul, 1983.
Begun, David R. *The Real Planet of the Apes: A New Story of Human Origins*. Princeton, NJ: Princeton University Press, 2016.
Bellah, Robert N. *Religion in Human Evolution: From the Paleolithic to the Axial Age*. Cambridge, MA: Belknap Press of Harvard University

Press, 2011.
Bénard, Alaine. “L’Art rupestre de Fontainebleau: Actualité de Recherche.” In *L’âge du bronze du nord de la France dans son contexte européen: Actes du 125e congrès national des sociétés historiques et scientifiques, Lille, 2000*, edited by Jean Bourgeois and Marc Talon, 169–81. Paris: Éditions du Comité des travaux historiques et scientifiques, 2005.
Berger, John. *Selected Essays and Articles: The Look of Things*. Harmondsworth: Penguin, 1972.
Bleed, Peter. “Trees or Chains, Links or Branches: Conceptual Alternatives for Consideration of Stone Tool Production and other Sequential Activities.” *Journal of Archaeological Method and Theory* 8 (2001): 101–27.
Bradley, Richard. *Image and Audience: Rethinking Prehistoric Art*. Oxford: Oxford University Press, 2009.
Breuil, Henri. *Four Hundred Centuries of Cave Art*. Translated by Mary E. Boyle. Montignac: Centre d’Études et de Documentation Préhistoriques, 1952.
Breuil, Henri, and R. Lantier. *Les Hommes de la Pierre ancienne*. 2nd ed. Paris: Payot, 1959.
Brochier, L.-E., and J.-L. Brochier. “L’Art mobilier de deux nouveaux Gisements magdaléniens Saint-Nazaire-en-Royans (Drôme).” É*tudes préhistoriques* 4 (1973): 1–12.
Brodrick, A. H. *The Abbé Breuil: Prehistorian: A Biography*. London: Hutchinson, 1963.
Brooks A. S., and C. C. Smith. “Ishango Revisited: New Age Determinations and Cultural Interpretations.” *African Archaeology Review* 5 (1987): 65–78.
Campen, Ingo, Joachim Hahn, and Margarethe Ürpmann, eds. *Spuren der Jagd—Die Jagd nach Spuren: Festschrift für Hansjürgen Müller-Beck*. Tübingen: Mo Vince Verlag, 1996.
Cartmill, Matt. *A View to a Death in the Morning: Hunting and Nature through History*. Cambridge: Cambridge University Press, 1993.
Centre national de la Recherche scientifique (CNRS). *André Leroi-Gourhan ou Les Voies de l’Homme: Actes du Colloque du CNRS, Mars, 1987*. Paris: Albin Michel, 1988.
Chamberlin, J. Edward. *If This Is Your Land, Where Are Your Stories? Finding Common Ground*. Toronto: Vintage, 2004.
Chase, Philip G., and Harold L. Dibble. “Middle Paleolithic Symbolism: A Review of Current Evidence and Interpretations.” *Journal of Anthropological Archeology* 6 (1987): 263–96.
Chauvet, Jean-Marie, Eliette Brunel Deschamps, and Christian Hillaire. *Chauvet Cave: The Discovery of the World’s Oldest Paintings*. Translated with a foreword by Paul G. Bahn. Epilogue by Jean Clottes. London: Thames and Hudson, 2001.
Chippendale, Christopher. “Current Issues in the Study of Paleolithic Images.” *American Journal of Archaeology* 103 (1999): 103–4.

———. “The Invention of Words for the Idea of ‘Prehistory.’” *Proceedings of the Prehistoric Society* 54 (1988): 303–14.
———. “Trying to Test a Trance Hypothesis in Its Social Context.” *Cambridge Archaeological Journal* 13 (2003): 210–20.
Clark, G. A. “Paradigms in Science and Archaeology.” *Journal of Archaeological Research* 1 (1993): 203–34.
———. *World Prehistory: A New Outline*. 2nd ed. Cambridge: Cambridge University Press, 1969.
Clottes, Jean. *Passion Préhistoire*. Paris: La Maison des Roches, 2003.
———. “Phénomènes de Mode dans l’Archéologie française.” In *The Limitations of Archaeological Knowledge*, edited by Talia Shay and Jean Clottes, 225–45. Liège: Études et Recherches Archéologiques de l’Université de Liège, No. 49, 1992.
———. “Recent Studies on Paleolithic Art.” *Cambridge Archaeological Journal* 6 (1996): 179–89.
———. “Twenty Thousand Years of Paleolithic Cave Art in Southern France.” In *World Prehistory: Studies in Memory of Grahame Clark*, edited by John Coles, Robert Wesley, and Paul Mellars, 161–75. London: British Academy, 1999.
———. *Voyage en Préhistoire: L’Art des Cavernes et des Abris de la Découverte à l’Interprétation*. Paris: La Maison des Roches, 1998.
———. *What Is Paleolithic Art? Cave Paintings and the Dawn of Human Creativity*. Translated by Oliver Y. Martin and Robert D. Martin. Chicago: University of Chicago Press, 2016.
Clottes, Jean, dir. *Chauvet Cave: The Art of Earliest Times*. Translated by Paul G. Bahn. Edited by Jean Clottes. Salt Lake City: University of Utah Press, 2003.
Clottes, Jean, A. Beltrán, J. Courtin, and H. Cosquer. “La Grotte Cosquer (Cap Morgiou, Marseille).” *Bulletin de la Société préhistorique française* 89 (1992): 98–128.
Clottes, Jean, and Jean Courtin. *The Cave beneath the Sea: Paleolithic Images of Cosquer*. Translated by Marilyn Garner. New York: Harry N. Abrams, 1996.
Clottes, Jean, Jean Courtin, Jacques Collina-Girard, Maurice Arnold, and Hélèna Valladas. “News from Cosquer Cave: Climatic Studies, Recording, Sampling, Dates.” *Antiquity* 71 (1997): 321–26.
Clottes, Jean, J. Courtin, H. Valladas, H. Cachier, N. Mercier, and M. Arnold. “La Grotte Cosquer datée.” *Bulletin de la Société préhistorique française* 89 (1992): 230–34.
Clottes, Jean, Jean Courtin, and Luc Vanrell. *Cosquer Redécouvert*. Paris: Seuil, 2005.
Clottes, Jean, and David Lewis-Williams. “Transe ou pas Transe: Réponse à Roberte Hamayon.” *Les Nouvelles de l’Archéologie* 69 (1997): 45–47.
———. *The Shamans of Prehistory: Trance and Magic in the Painted Caves*. Translated by Sophie Hawkes. New York: Harry N. Abrams, 1998.
Clottes, Jean, and T. Shaw, eds. *The Limitations of Archaeological*

Knowledge. Liège: University of Liège, 1992.
Coles, John M., and E. S. Higgs. *The Archaeology of Early Man*. London: Faber and Faber, 1969.
Conkey, Margaret. "A History of European 'Paleolithic Art': Magic, Mythogram, and Metaphor for Modernity." In *Handbook of Human Symbolic Evolution*, edited by Andrew Lock and Charles R. Peters, 306–7. Oxford: Clarendon, 1996.
———. "New Approaches in the Search for Meaning? A Review of Research in 'Paleolithic Art.'" *Journal of Field Archaeology* 14 (1987): 413–30.
———. "Paleovisions: Interpreting the Imagery of Ice Age Europe." In *The Art of Interpreting: Papers in Art History from the Pennsylvania State University*, edited by Susan C. Scott, 9:10–26. University Park: Pennsylvania State University Press, 1995.
———. "The Structural Analysis of Paleolithic Art." In *Archaeological Thought in America*, edited by C. C. Lamberg-Karlovsky, 135–54. Cambridge: Cambridge University Press, 1989.
Conkey, Margaret, and Christine Hasdorf, eds. *The Uses of Style in Archaeology*. Cambridge: Cambridge University Press, 1990.
Cooper, Barry. *Action into Nature: As Essay on the Meaning of Technology*. Notre Dame, IN: University of Notre Dame Press, 1991.
———. *Consciousness and Politics: From Analysis to Meditation in the Late Work of Eric Voegelin*. South Bend, IN: St. Augustine's Press, 2018.
———. *Eric Voegelin and the Foundations of Modern Political Science*. Columbia: University of Missouri Press, 1999.
———. "'A Lump bred up in Darknesse': Two Tellurian Themes in the *Republic*." In *Politics, Philosophy, Writing: Plato's Art of Caring for Souls*, edited by Zdravko Planinc, 80–121. Columbia: University of Missouri Press, 2001.
———. "Neanderthal Politics." In *The Human Voyage of Self-Discovery: Essays in Honour of Brendan Purcell*, edited by Brian Leahy and David Walsh, 44–69. Dublin: Veritas, 2013.
———. "Reduction, Reminiscence and the Search for Truth." In *The Philosophy of Order: Essays on History, Consciousness and Politics, for Eric Voegelin on his Eightieth Birthday, January 3, 1981*, edited by Peter J. Opitz and Gregor Sebba, 316–31. Stuttgart: Klett-Cotta, 1981.
Cooper, Barry, and Jodi Bruhn, eds. *Voegelin Recollected: Conversations on a Life*. Columbia: University of Missouri Press, 2008.
Corchón, S., D. Garate, H. Valladas, O. Rivero, E. Pons-Branchu, P. Ortega, and C. Hernando. "Back to the Point: New Datings for La Peña de Candamo Cave Art (Asturias)." *Zephyrus* 73 (2014): 67–81.
Cosquer, Henri. *La Grotte Cosquer: Plongée dans la Préhistoire*. SOLAR, 1992.
Coye, Noël, ed. *Sur les Chemins de la Préhistoire: L'Abbé Breuil du Périgord à l'Afrique du Sud.* Nemours: Musée départmental de Préhistoire d'Île de France, 2006.

Daniel, Glyn, ed. *Towards a History of Archaeology*. London: Thames and Hudson, 1981.
Davis, Whitney. "The Origins of Image-Making." *Current Anthropology* 27 (1986): 199–210.
Dawkins, Richard. *The Greatest Show on Earth: The Evidence for Evolution*. New York: Free Press, 2004.
Deetz, James. "Archaeologists as Storytellers." *Historical Archaeology* 32 (1998): 94–108.
De Heinzelin, Jean. "Ishango." *Scientific American* 206 (June 1962): 105–16.
Deinhard, Hanna. *Meaning and Expression: Towards a Sociology of Art*. Boston: Beacon, 1970.
Delluc, B., and G. Delluc. *Dictionnaire de Lascaux*. Bordeaux: Éditions du Sud-Ouest, 2008.
D'Errico, F. "Paleolithic Lunar Calendars: A Case of Wishful Thinking?" *Current Anthropology* 30 (1989): 117–18.
D'Errico, F., and Carmen Cacho. "Notation versus Decoration in the Upper Paleolithic: A Case-Study from Tossal de la Roca, Alicante, Spain." *Journal of Archaeological Science* 21 (1994): 185–200.
D'Errico, F., and April Nowell. "A New Look at the Berekhat Ram Figurine: Implications for the Origins of Symbolism." *Cambridge Archaeological Journal* 10 (2000): 123–67.
D'Errico, F., and Paola Villa. "Holes and Grooves: The Contribution of Microscopy and Taphonomy to the Problem of Art Origins." *Journal of Human Evolution* 33 (1997): 3–14.
Dickson, Bruce. *The Dawn of Belief: Religion in the Upper Paleolithic of Southwestern Europe*. Tucson: University of Arizona Press, 1990.
Dioszegi, V., and M. Hoppal, eds. *Shamanism in Siberia*. Budapest: Akadémiai Kiado, 1978.
Dowson, T. "Debating Shamanism in Southern African Rock Art: Time to Move On . . ." *South African Archaeological Bulletin* 62 (2007): 49–61.
Dudley, Guilford, III. *Religion on Trial: Mircea Eliade and His Critics*. Philadelphia: Temple University Press, 1977.
Edwards, Stephen W. "Nonutilitarian Activities in the Lower Paleolithic: A Look at Two Kinds of Evidence." *Current Anthropology* 19 (1978): 135–37.
Eliade, Mircea. *Autobiography*. Vol. 1, *1937–1960*. Translated by Mac Linscott Ricketts. Chicago: University of Chicago Press, 1981.
———. *Shamanism: Archaic Techniques of Ecstasy*. Translated by Willard R. Trask. Bollingen Series 76. New York: Pantheon, 1964.
Elkins, James. "On the Impossibility of Close Reading: The Case of Alexander Marshack." *Current Anthropology* 37 (1996): 185–226.
Embry, Charles R. *The Philosopher and the Storyteller: Eric Voegelin and Twentieth-Century Literature*. Columbia: University of Missouri Press, 2008.
Eshleman, Clayton. *Juniper Fuse: Upper Paleolithic Imagination and the Construction of the Underworld*. Middleton, CT: Wesleyan University

Press, 2003.
Findlay, C. Scott, and Charles J. Lumsden, eds. *The Creative Mind*. London: Academic Press, 1988.
Fortea-Pérez, F. J. “Trente-neuf dates C-14-SMA pour l’Art pariétal paléolithique des Asturias.” *Bulletin de la Société Préhistorique Ariège Pyrénées* 57 (2002): 7–28.
Francfort, Henri-Paul, and Roberte N. Hamayon, eds. *The Concept of Shamanism: Uses and Abuses*. With the collaboration of Paul G. Bahn. Budapest: Akadémiai Kiadó, 2001.
Frankfort, Henri, John A. Wilson, and Thorkild Jacobsen. *Before Philosophy: The Intellectual Adventure of Ancient Man, an Essay on Speculative Thought in the Ancient Near East*. Baltimore: Penguin, 1946.
Fuentes, Agustin. *The Creative Spark: How Imagination Made Humans Exceptional*. New York: Dutton, 2017.
Garcia Guinea, M. A. *Altamira and Other Cantabrian Caves*. Translated by Lynne Polak. Madrid: Silex, 1979.
Gaucher, Gilles. “André Leroi-Gourhan, 1911–1986.” *Bulletin de la Société préhistorique française* 84 (1987): 302–15.
Geertz, Clifford. *The Interpretation of Cultures: Selected Essays*. New York: Basic Books, 1973.
———. *Life among the Anthros*. Edited by Fred Ingles. Princeton, NJ: Princeton University Press, 2010.
Girard, Michel, and Jacques Hinout. “Essai de Chronologie de Sites mésolithiques de Bassin Parisien par l’Analyse pollinique.” *Bulletin de la Société préhistorique française* 87 (1990): 113–16.
Gould, Stephen Jay. *Ontogeny and Phylogeny*. Cambridge, MA: Harvard University Press, 1977.
Gould, Stephen Jay, and Elisabeth S. Vrba. “Exaptation: A Missing Term in the Science of Form.” *Paleobiology* 8 (1982): 4–15.
Greene, K. “V. Gordon Childe and the Vocabulary of Revolutionary Change.” *Antiquity* 73 (1999): 97–109.
Grene, Marjorie, and David Depew. *The Philosophy of Biology: An Episodic History*. Cambridge: Cambridge University Press, 2004.
Le Groupe Préhistoire. “L’Auvent Marie Koenig à Moigny.” *Chronique Archéologique* 3 (October 1975): 11–18.
Halifax, Joan. *Shamanism: The Wounded Healer*. New York: Crossroad, 1982.
Halverson, John. “Art for Art’s Sake in the Paleolithic.” *Current Anthropology* 28 (1987): 63–89.
Hamayon, R. N. “La Transe d’un Préhistorien: À propos du livre de Jean Clottes et David Lewis-Williams.” *Les Nouvelles de l’Archéologie* 67 (1997): 65–67.
Hassmann, H. “Archeology in the ‘Third Reich.’” In *Archeology, Ideology and Society: The German Experience*, edited by Heinrich Härke, 65–139. Frankfurt: Peter Lang, 2000.
Hawkins, Gerald S. “Stonehenge Decoded.” *Nature* 200 (October 1963):

306–8.
———. “Stonehenge: A Neolithic Computer.” *Nature* 202 (June 1964): 1258–61.
Hawkins, Gerald S., and J. B. White. *Stonehenge Decoded*. Garden City: Doubleday, 1965.
Helvenston, Patricia, and Paul Bahn. “Testing the ‘Three Stages of Trance’ Model.” *Cambridge Archaeological Journal* 13 (2003): 213–24.
———. *Waking the Trance Fixed*. Louisville, KY: Wasteland Press, 2005.
Hemingway, Andrew, ed. *Marxism and the History of Art: From William Morris to the New Left*. London: Pluto, 2006.
Hodder, Ian. “Writing Archaeology: Site Reports in Context.” *Antiquity* 63 (1989): 268–74.
———, ed. *Archaeological Theory in Europe: The Last Three Decades*. London: Routledge, 1991.
Hosfield, R., F. Wenban-Smith, and M. Pope, eds. *Great Prehistorians: 150 Years of Paleolithic Research, 1859–2009*. Special issue, *Lithics: The Journal of the Lithic Studies Society* 30 (2009).
Hughes, Glen. *Transcendence and History: The Search for Ultimacy from Ancient Societies to Postmodernity*. Columbia: University of Missouri Press, 2003.
Huizinga, J. *Homo Ludens: A Study of the Play Element in Culture*. Boston: Beacon, 1950.
Hurel, Arnaud. *L’Abbé Breuil: Un Préhistorien dans le Siècle*. Paris: Éditions CNRS, 2011.
Ingold, Tim. *Evolution and Social Life*. Cambridge: Cambridge University Press, 1986.
———. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Routledge, 2000.
———. “‘Tools for the Hand, Language for the Face’: An Appreciation of Leroi-Gourhan’s *Gesture and Speech*.” *Studies in History and Philosophy of Biological and Biomedical Sciences* 30 (1999): 430–51.
Ingold, Tim, and Gisli Palsson, eds. *Biosocial Becoming: Integrating Social and Biological Anthropology*. Cambridge: Cambridge University Press, 2013.
Jacobs, Brian, and Patrick Kain, eds. *Essays on Kant’s Anthropology*. Cambridge: Cambridge University Press, 2003.
James, William. *Varieties of Religious Experience*. London: Longmans Green, 1902.
Johnson, Christopher. “Leroi-Gourhan and the Limits of the Human.” *French Studies: A Quarterly Review* 65 (2011): 471–87.
Jonas, Hans. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Chicago: University of Chicago Press, 1984.
———. *The Phenomenon of Life: Toward a Philosophical Biology*. Chicago: University of Chicago Press, 1982.
———. *Philosophical Essays: From Ancient Creed to Technological Man*. Englewood Cliffs, NJ: Prentice-Hall, 1974.

Jouve, Guy. “L’attribution culturelle des sculptures du Jura souabe selon les documents des découvreurs.” *L’anthropologie* 123 (2019): 39–65.
Joyce, Rosemary A. *The Language of Archaeology: Dialogue, Narrative and Writing*. Oxford: Blackwell, 2002.
Kant, Immanuel. *Critique of the Power of Judgement*. Edited by Paul Guyer. Translated by Paul Guyer and Eric Matthews. Cambridge: Cambridge University Press, 2000.
———. *Immanuel Kant’s Critique of Pure Reason*. Translated by Norman Kemp Smith. London: Macmillan, 1983.
Kater, M. H. *Das “Ahnenerbe” der SS, 1936–1945: Ein Beitrag zur Kulturpolitik des Dritten Reiches*. 2nd ed. Munich: Oldenburg, 1970.
Kehoe, Alice Beck. “Eliade and Hultkrantz: The European Primitivist Tradition.” In *Shamanism: Critical Concepts in Sociology*, edited by Andre Znamenski, 3:71–89. London: Routledge Curzon, 2004.
———. *Shamans and Religion: An Anthropological Exploration in Critical Thinking*. Prospect Heights, IL: Waveland Press, 2000.
Keyser, James D., George R. Poetshat, and Michael W. Taylor, eds. *Talking with the Past: The Ethnography of Rock Art*. Portland: Oregon Archaeological Society, 2006.
Kirchner, Horst. “Ein archäologicher Beitrag zur Urgeschichte des Shamanisimus.” *Anthropos* 47 (1952): 244–86.
Kohl, Philip L., and Clare Fawcett, eds. *Nationalism, Politics, and the Practice of Archaeology*. Cambridge: Cambridge University Press, 1995.
König, Marie. *Am Anfang der Kultur: Die Zeichensprache des frühen Menschen*. Berlin: Gebr. Mann Verlag, 1973.
———. “A propos de l’Évolution continuelle de la Civilisation pendant les Périodes préhistoriques.” In *Eternità e Storia: I Valori permanenti nel Divenire storico*, a cura dell’istituto Accademico di Roma, 131–42. Florence: Vallecchi 1970.
———. “Celtic Coins: A New Interpretation.” *Archaeology* 19 (1966): 17–28.
———. “Comparisons entres les Signes dans les Grottes de la Forêt de Fontainebleau et la Numismatique Gauloise.” *Cahiers Numismatiques* 50 (1976): 88–98.
———. “The Development of Culture in the Light of Archaeology.” *Mankind Quarterly* 13 (1973): 151–57.
———. “Frau Neandertaler hatte Kultur.” *Emma* 8 (1982): 54–59.
———. “Problème des Images Quaternaires.” *Congrès préhistorique de France: Compte rendu de la XIVe session, Strasbourg-Metz, 1953*, 359–71. Paris: Société préhistorique française, 1955.
———. *Das Rätsel der keltischen Münzen*. Maschen: Hallonen Verlag, 1975.
———. “Die Symbolik des Urgeschichtlichen Menschen.” *Symbolion* 5 (1966): 121–28.
———. *Unsere Vergangenheit ist älter: Höhlencult Alt-Europas*. Frankfurt: Fischer Verlag, 1980.

———. *Das Weltbild der Eiszeitlichen Menschen*. Marburg: N. G. Elwert Verlag, 1954.
———. "Zur geistigen Situation des Jungpäleolithikers." *Psychologische Beitrage* 3 (1957): 476–88.
Kroeber, A. L., ed. *Anthropology Today: An Encyclopedia Inventory*. Chicago: University of Chicago Press, 1953.
Kühn, H. *On the Track of Prehistoric Man*. Translated by Alan Houghton. New York: Random House, 1955.
La Barre, Weston. *The Ghost Dance: Origins of Religion*. New York: Delta, 1970.
———. "Materials for a History of Studies of Crisis Cults: A Bibliographic Essay." *Current Anthropology* 12 (1971): 3–44.
Laming, Annette. "An Interpretation of Prehistoric Art: Lascaux." *Antiquity and Survival* 3 (1955): 205–20.
———. *Lascaux: Chapelle sixtine de la Préhistoire*. Vézère: Centre d'Études et de Documentation, 1948.
———. *Lascaux: Paintings and Engravings*. Translated by E. F. Armstrong. Harmondsworth: Penguin, 1959.
———. "Un Sanctuaire paléolithique: La Grotte de Lascaux." *L'Âge nouveau* 30 (1948): 63–69.
Laming-Emperaire, Annette. "L'Analyse descriptive de l'Industrie lithique." *Paléo-Québec* 9 (1979): 9–58.
———. "Archéologie préhistorique et Sciences humaines." In *Echanges et Communications: Mélanges offerts à Claude Lévi-Strauss à l'Occasion de son 60ème Anniversaire*, edited by Jean Povillon and Pierre Maranda, 393–412. The Hague: Mouton, 1970.
———. "Art rupestre et Organisation sociale." *Santander Symposium* (1972): 65–82.
———. "Une Hypothèse de Travail: Pour Une nouvelle Approche des Sociétés préhistoriques." In *Mélanges de Préhistoire, d'Archéocivilisation, et d'Ethnologie offerts à André Varagnac*, 541–51. Paris: École Pratique des Hautes Etudes, VIe Section, Centre de Recherches historiques, 1971.
———. *Origines de l'Archéologie préhistorique en France*. Paris: Picard, 1964.
———. "Préhistoire, Sciences humaines et Sciences de la Nature." *Bulletin de la Société préhistorique française* 66 (1969): 166–71.
———. *La Signification de l'Art rupestre paléolithique*. Paris: Picard, 1962.
———. "Système de Pensée et Organisation sociale dans l'Art rupestre paléolithique." In *L'Homme de Cro-Magnon: Anthropologie et Archéologie, 1868–1968*, edited by Gabriel Camps and Georges Olivier, 197–212. Paris: Arts et Métiers graphiques, 1970.
Landau, Misia. *Narratives of Human Evolution*. New Haven, CT: Yale University Press, 1991.
Larson, James L. *Interpreting Nature: The Science of Living Form from Linnaeus to Kant*. Baltimore: Johns Hopkins University Press, 1994.
Lawson, Andrew J. *Painted Caves: Paleolithic Rock Art in Western Europe*.

Oxford: Oxford University Press, 2012.
Layton, Robert. “Shamanism, Totemism and Rock Art: *Les Chamanes de la Préhistoire* in the Context of Rock Art Research.” *Cambridge Archaeological Journal* 10 (2000): 169–70.
Lemonier, Pierre. *Les Salines de l’Ouest, Logique technique, Logique sociale*. Paris: Édition de la Maison des Sciences de l’Homme, 1980.
Leroi-Gourhan, André. *The Art of Prehistoric Man in Western Europe*. Translated by N. Guterman. London: Thames and Hudson, 1968.
———. *The Dawn of European Art: An Introduction to Paleolithic Cave Paintings*. Translated by Sara Champion. London: Cambridge University Press, 1982.
———. *Evolution et Techniques*. Vol. 1, *L’Homme et la Matière*. 2nd ed. Paris: Albin Michel, 1971.
———. *Le Fil du Temps: Ethnologie et Préhistoire*. Paris: Fayard, 1983.
———. *Gesture and Speech*. Translated by Anna Bostock Berger. Cambridge, MA: MIT Press, 1993.
———. *The Hunters of Prehistory*. Translated by Claire Jacobson. New York: Atheneum 1989.
———. “Le Préhistorien et le Chamane.” *Revue de la Société d’Ethnographie* 74, no. 5 (1977): 20–34.
———. *Les Religions de la Préhistoire*. Paris: Presses Universitaires de France, 1964.
———. *Treasures of Prehistoric Art.* Translated by Norbert Guterman. New York: Harry N. Abrams, 1967.
Leroi-Gourhan, André, and M. Brézillon. “L’Habitation magdalénienne: No. 1 de Pincevent, près Montereau (Seine et Marne).” *Gallia-Préhistoire* 9 (1966): 263–85.
Leroi-Gourhan, Arlette, and J. Allain, eds. *Lascaux Inconnu*. XIIe Supplément à “Gallia Préhistoire.” Paris: CNRS, 1979.
Lévi-Strauss, Claude. *Structural Anthropology*. New York: Basic Books, 1963.
Levy, David J. *Hans Jonas: The Integrity of Thinking*. Columbia: University of Missouri Press, 2002.
Lewin, Roger. *Bones of Contention: Controversies in the Search for Human Origins*. New York: Simon and Schuster, 1987.
———. “Ice-Age Art Toppled.” *Science* 4895 (March 1989): 1435.
Lewis-Williams, J. D. *Conceiving God: The Cognitive Origins and Evolution of Religion*. London: Thames and Hudson, 2010.
———. *A Cosmos in Stone: Interpreting Religion and Society through Rock Art.* New York: Rowman and Littlefield, 2002.
———. *The Mind in the Cave: Consciousness and the Origin of Art*. London: Thames and Hudson, 2002.
———. “Neuropsychology and Upper Paleolithic Art: Observations on the Progress of Altered States of Consciousness.” *Cambridge Archaeological Journal* 14 (2004): 107–11.
Lewis-Williams, J. D., and Jean Clottes. “Shamanism and Upper Paleolithic Art: A Response to Bahn.” *Rock Art Research* 15 (1998):

46–50.
Lewis-Williams, J. D., and T. Dowson. “The Signs of All Times: Entoptic Phenomena in Upper Paleolithic Art.” *Current Anthropology* 29 (1988): 201–45.
———. “Theory and Data: A Brief Critique of A. Marshack’s Research Methods and Position on Upper Paleolithic Shamanisms.” *Rock Art Research* 6 (1989): 38–50.
———. “Through the Veil: San Rock Paintings and the Rock Face.” *South African Archaeological Bulletin* 45 (1990): 5–16.
Lewis-Williams, J. D., and David Pearce. *Inside the Neolithic Mind: Consciousness, Cosmos, and the Realm of the Gods*. London: Thames and Hudson, 2005.
Lonergan, Bernard J. F. *Insight: A Study of Human Understanding*. New York: Philosophical Library, 1957.
Lorblanchet, Michael. “The Archaeological Significance of the Results of Pigment Analysis in Quercy Caves.” *Rock Art Research* 7 (1990): 15–25.
———. *Art Pariétal: Grottes Ornées du Quercy*. Rodez: Rouergne, 2010.
———. *L’Art préhistorique du Quercy*. Portet-sur-Garonne: Loubatières, 2004.
———. *La Naissance de l’Art: Genèse de l’Art Préhistorique dans le Monde*. Paris: Errance, 1999.
———, ed. *Rock Art in the Old World*. New Delhi: Indira Gandhi National Centre for the Arts, 1992.
———. “Au Sujet de l’Article de J. Combier et G. Jouve, et de la Datation de la Grotte Chauvet.” *L’Anthropologie* 118 (2014): 152–58.
Lorblanchet, Michael, and Paul Bahn. *The First Artists: In Search of the World’s Oldest Art*. London: Thames and Hudson, 2017.
———, eds. *Rock Art Studies: The Post-Stylistic Age, or Where Do We Go from Here?* Oxford: Oxbow, 1993.
Lumley, Henri de. “L’Homme de Tautavel.” Paper presented at XI Congrès de l’Union internationale des sciences préhistoriques et protohistoriques, Barcelona, 1979.
———. *L’Homme de Tautavel: La Caune de l’Arago de 700000 à 100000 ans*. Paris: Éditions du Patrimoine, 2014.
Lyman, R. Lee, and Michael J. O’Brien. “The Direct Historical Approach, Analogical Reasoning, and Theory in Americanist Archeology.” *Journal of Archeological Method and Theory* 8 (2001): 303–42.
Marchand, Suzanne L. *Down from Olympus: Archeology and Philhellenism in Germany, 1750–1970*. Princeton, NJ: Princeton University Press, 1996.
Marks, Jonathan. *What It Means to be 98% Chimpanzee: Apes, People, and Their Genes*. Berkeley: University of California Press, 2002.
Marshack, Alexander. “Analyse préliminaire d’une Gravure à système de Notation de la Grotte du Taï (Drôme).” *Études préhistoriques* 4 (1973): 13–16.
———. “Aq Kupruk: Art and Symbol.” In “Prehistoric Research in

Afghanistan (1959–1966)," edited by Louis Dupree. *Transactions of the American Philosophical Society* 62, no. 4 (1972): 66–72.
———. "The Baton of Montgaudier." *Natural History* 79 (1970): 56–73.
———. "Le Bâton de Commandement de Montgaudier (Charente): Réexamen au Microscope et Interprétation Nouvelle." *L'Anthropologie* 74 (1970): 321–52.
———. "The Chamula Calendar Board: An Internal and Comparative Analysis." In *Mesoamerican Archaeology: Proceedings of a Symposium on Mesoamerican Archaeology held by the University of Cambridge Centre of Latin American Studies, August 1972*, edited by Norman Hammond, 255–70. London: Duckworth, 1974.
———. "Cognitive Aspects of Upper Paleolithic Engraving." *Current Anthropology* 13 (1972): 445–77.
———. "Evolution of the Human Capacity: The Symbolic Evidence." *Yearbook of Physical Anthropology* 32 (1989): 1–34.
———. *Hierarchical Evolution of the Human Capacity: The Paleolithic Evidence*. New York: American Museum of Natural History, 1985.
———. "Ice Age Analysis." *Science* 244 (June 1989): 1029.
———. "Lunar Notations on Upper Paleolithic Remains." *Science* 146 (November 1964): 743–45.
———. "A Lunar-Solar Year Calendar Stick from North America." *American Antiquity* 50 (1985): 27–51.
———. "Methodology and the Search for Notation among Engraved Pebbles of the European Late Paleolithic." *Antiquity* 69 (1995): 1049–51.
———. "New Techniques in the Analysis and Interpretation of Mesolithic Notation and Symbolic Art." In *Symposium International de l'Art Préhistorique*, edited by E. Anati, 480–95. Capo di Ponte: Editioni del Centro, 1970.
———. *Notation dans les Gravures du Paléolithique*. Mémoire No. 8 of the Institut de Préhistoire de l'Université de Bordeaux. Edited by F. Bordes. Bordeaux: Imprimeries Delmas, 1970.
———. "On Paleolithic Ochre and the Early Uses of Color and Symbol." *Current Anthropology* 22 (1981): 188–91.
———. "The Origin of Image-Making." *Current Anthropology* 27 (1986): 193–215.
———. "Paleolithic Notation: Marshack and Rosenfeld." *Antiquity* 46 (1972): 63–65.
———. "La Pensée Symbolique et l'Art." *Dossiers d'Histoire et d'Archéologie* 124 (1988): 80–90.
———. "Polesini: A Reexamination of the Engraved Upper Paleolithic Mobiliary Materials of Italy by a New Methodology." *Revista di Scienze preistoriche* 24 (1969): 219–81.
———. *The Roots of Civilization*. Revised and expanded edition. Mt. Kisco, NY: Moyer Bell, 1991.
———. *The Roots of Civilization: The Cognitive Beginnings of Man's First Art, Symbol, and Notation*. New York: McGraw-Hill, 1972.

———. “Some Implications of the Paleolithic Symbolic Evidence for the Origin of Language.” *Current Anthropology* 17 (1976): 274–82.
———. “The Taï Plaque and Calendrical Notation in the Upper Paleolithic.” *Cambridge Archaeological Journal* 1 (1991): 25–61.
———. “Upper Paleolithic Notation and Symbol.” *Science* 178, no. 4063 (1972): 817–28.
———. “Upper Paleolithic Symbol Systems of the Russian Plain: Cognitive and Comparative Analysis.” *Current Anthropology* 20 (1979): 271–311.
———. *The World in Space: The Story of the International Geophysical Year*. New York: Thomas Nelson and Sons, 1958.
Marshack, Alexander, and F. d’Errico. “On Wishful Thinking and Lunar ‘Calendars.’” *Current Anthropology* 30 (1989): 491–500.
———. “The La Marche Antler Revisited.” *Cambridge Archaeological Journal* 6 (1996): 99–117.
McNeill, William H. *Keeping Together in Time: Dance and Drill in Human History*. Cambridge, MA: Harvard University Press, 1995.
McPartland, Thomas J. *Lonergan and the Philosophy of Historical Existence*. Columbia: University of Missouri Press, 2001.
Meixner, Gabriele. *Auf der Suche nach dem Anfang der Kultur: Marie E. P. König, Eine Biographie*. Munich: Franenoffensiv, 1999.
Mellars, Paul, ed. *The Emergence of Modern Humans: An Archaeological Perspective*. Ithaca, NY: Cornell University Press, 1990.
Ministère de la Culture. *Lartet, Breuil, Peyrony et les Autres*. Sarlat: Ministère de la Culture, 1990.
Mithen, Steven J. *Thoughtful Foragers: A Study of Prehistoric Decision-Making*. Cambridge: Cambridge University Press, 1990.
Moncel, Marie-Hélène. “Tata (Hongrie): Un Assemblage microlithique du Début du Pléistocène supérieur en Europe Centrale.” *L’Anthropologie* 107 (2003): 117–51.
Morris, Ian. *Foragers, Farmers, and Fossil Fuels: How Human Values Evolve*. Princeton, NJ: Princeton University Press, 2015.
Murphy, Howard, ed. *Animals into Art*. London: Unwin Hyman, 1989.
Noll, R. “Shamanism and Schizophrenia: A State-Specific Approach to the ‘Schizophrenia Metaphor’ of Shamanic States.” *American Ethnology* 10 (1983): 443–59.
Nowell, April, and Melanie L. Chang. “Science, the Media, and Interpretations of Upper Paleolithic Figurines.” *American Anthropologist* 116 (2014): 562–77.
Onians, R. B. *The Origins of European Thought about the Body, the Mind, the Soul, the World, Time, and Fate*. Cambridge: Cambridge University Press, 1989.
Pääbo, Svante. *Neanderthal Man: In Search of Lost Genomes*. New York: Basic Books, 2014.
Pearson, James L. *Shamanism and the Ancient World: A Cognitive Approach to Archaeology*. Lanham, MD: Altamira Press, 2002.
Perrin, Michael. *Le Chamanisme*. Paris: Presses Universitaires de France,

1995.
Pettitt, Paul, and Paul Bahn. “Against Chauvet-nism: A Critique of Recent Attempts to Validate an Early Chronology for the Art of Chauvet Cave.” *L’Anthropologie* 118 (2014): 163–82.
———. “Current Problems in Dating Paleolithic Cave Art: Candamo and Chauvet.” *Antiquity* 77 (2003): 130–38.
Pettitt, Paul, and Alistair Pike. “Dating European Paleolithic Cave Art: Progress, Prospects, Problems.” *Journal of Archaeological Method and Theory* 14 (2007): 27–47.
Polanyi, Michael. *Personal Knowledge: Towards a Post-Critical Philosophy*. Chicago: University of Chicago Press, 1962.
Price, R. N., ed. *The Archeology of Shamanism*. London: Routledge, 2001.
Purcell, Brendan. *The Drama of Humanity: Towards a Philosophy of Humanity in History*. Frankfurt: Peter Lang, 1996.
———. *From Big Bang to Big Mystery: Human Origins in the Light of Creation and Evolution*. Dublin: Veritas, 2011.
Pyne, Lydia V., and Stephen J. Pyne. *The Last Lost World: Ice Ages, Human Origins and the Invention of the Pleistocene.* New York: Penguin, 2012.
Raphael, Max. *The Demands of Art.* Translated by Norbert Guterman. Bollingen Series 78. Princeton, NJ: Princeton University Press, 1968.
———. *Prehistoric Cave Paintings*. Translated by Norbert Guterman. Bollingen Series 4. New York: Pantheon, 1945.
———. *Prehistoric Pottery and Civilization in Egypt*. Translated by Norbert Guterman. Bollingen Series 8. New York: Pantheon, 1947.
———. *Trois Essais sur la Signification de l’Art pariétal paléolithique*. Edited by Patrick Brault. Translated by Marie-France Brault, Patrick Brault, Evelyn Kuhn, and Rainer Rochliz. Paris: Le Couteau dans la Plaie/ Kronos, 1986.
Renfrew, Colin. *Prehistory: The Making of the Human Mind*. London: Phoenix, 2007.
Renfrew, Colin, and Ezra B. W. Zubow, eds. *The Ancient Mind: Elements of Cognitive Archaeology*. Cambridge: Cambridge University Press, 1994.
Renfrew, Colin, and Iain Morley, eds. *Becoming Human: Innovation in Prehistoric Material and Spiritual Culture*. Cambridge: Cambridge University Press, 2009.
Reznikoff, Iégor, and Michel Dauvois. “La Dimension sonore des Grottes ornées.” *Bulletin de la Société préhistorique française* 85 (1988): 238–46.
Richard, N. *Inventer la Préhistoire: Les Débuts de l’Archéologie Préhistorique en France*. Paris: Vuibert, 2008.
Richir, Marc. *Leroi-Gourhan: Essence et Contingence dans la Destinée humaine*. Paris: DeBoeck, 1996.
Robinson, Judy. “Not Counting on Marshack: A Reassessment of the Work of Alexander Marshack on Notation in the Upper Paleolithic.” *Journal of Mediterranean Studies* 2 (1992): 1–17.
Rocquet, Claude-Henri. *Leroi-Gourhan, Les Racines du Monde: Entretiens avec Claude-Henri Rocquet*. Paris: Belfond, 1982.

Rosenfeld, Andrée. “Review.” *Antiquity* 45 (1971): 317–19.
Rosengren, Mats. *Cave Art, Perception and Knowledge*. London: Palgrave Macmillan, 2012.
Rossano, Matt J. “Did Meditation Make Us Human?” *Cambridge Archaeological Journal* 17 (2004): 45–58.
Rowe, M. W. “Radiocarbon Dating of Ancient Pictograms with Accelerator Mass Spectrometry.” *Rock Art Research* 21 (2004): 145–53.
Sahlins, Marshall. *Stone Age Economics.* Chicago: Aldine, 1972.
Sandoz, Ellis, ed. *Eric Voegelin’s Significance for the Modern Mind*. Baton Rouge: Louisiana State University Press, 1991.
Sauvet, Georges, and André Wlodarczyk. “Towards a Formal Grammar of the European Paleolithic Cave Art.” *Rock Art Research* 25 (2008): 165–72.
Schabert, Tilo. *Die Architektur der Welt: Ein kosmologische Lektüre architektonischer Formen*. Munich: Fink, 1999.
———. *The Second Birth: On the Political Beginnings of Human Existence*. Translated by Javier Ibáñez-Noé. Chicago: University of Chicago Press, 2015.
———. *Stadtarchitektur: Spiegel der Welt*. Zürich: Benziger, 1990.
Scheler, Max. *Man’s Place in Nature*. Translated by Hans Meyerhoff. Boston: Beacon, 1961.
———. *Die Stellung des Menschen im Kosmos*. Bonn: Bouvier, 2007.
Schutz, Alfred. *Collected Papers*. Vol. 1, *The Problem of Social Reality*. The Hague: Martinus Nijhoff, 1967.
Schwartz, H. P., and I. Skoflek. “New Dates for the Tata, Hungary Archaeological Site.” *Nature* 295 (February 1982): 590–91.
Scruton, Roger. *The Soul of the World*. Princeton, NJ: Princeton University Press, 2014.
Sharpe, Kevin, and Leslie VanGelder. “Finger Flutings in Chamber A1 of Rouffignac Cave, France.” *Rock Art Research* 23 (2006): 179–98.
———. “The Study of Finger Flutings.” *Cambridge Archaeological Journal* 16 (2006): 281–95.
Sidky, Homayun. “On the Antiquity of Shamanism and its Role in Human Religiosity.” *Method and Theory in the Study of Religion* 22 (2010): 68–92.
Sieveking, A. *The Cave Artists*. London: Thames and Hudson, 1979.
Smith, Noel. *An Analysis of Ice Age Art: Its Psychology and Belief System*. New York: Peter Lang, 1992.
Stoczkowski, Wiktor. *Explaining Human Origins: Myth, Imagination, and Conjecture*. Translated by Mary Turton. Cambridge: Cambridge University Press, 2002.
Straus, Lawrence Guy. “L’Abbé Henri Breuil.” *Bulletin of the History of Archaeology* 2 (1992): 5–9.
Taborin, Yvette. “Les Interprétations de l’Art paléolithique.” *Archéologia* 356 (2000): 52–61.
Tassé, Gilles. *Pétroglyphes du Bassin Parisien*. XVIe Supplément à “Gallia

Préhistoire." Paris: CNRS, 1982.
Tattersall, Ian. "An Evolutionary Framework for the Acquisition of Symbolic Cognition by *Homo sapiens*." *Comparative Cognition and Behavior Reviews* 3 (2008): 99–114.
———. "Human Origins: Out of Africa." *Proceedings of the National Academy of Sciences USA* 106 (September 2009): 16018–21.
———. *The Monkey in the Mirror: Essays on the Science of What Makes Us Human*. New York: Harcourt, 2002.
Tattersall, Ian, and Jeffrey H. Schwartz. *Extinct Humans*. Boulder, CO: Westview, 2000.
Taussig, M. *Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing*. Chicago: University of Chicago Press, 1987.
Thibaut, G. "3-D Modelling of the Cosquer Cave by Laser Survey." *International Newsletter on Rock Art* 28 (2001): 25–29.
Thompson, William M., and David L. Morse, eds. *Voegelin's Israel and Revelation: An Interdisciplinary Debate and Anthology*. Milwaukee, WI: Marquette University Press, 2000.
Tomášková, Silvia. *Wayward Shamans: The Prehistory of an Idea*. Berkeley: University of California Press, 2013.
Tomkins, Calvin. "A Reporter at Large: Thinking in Time." *New Yorker*, April 22, 1974, 114–28.
Trigger, Bruce G. *A History of Archaeological Thought*. 2nd ed. Cambridge: Cambridge University Press, 2009.
Trinkaus, Erik. "Early Modern Humans." *Annual Review of Anthropology* 34 (2005): 207–30.
———. "European Early Modern Humans and the Fate of the Neandertals." *Proceedings of the National Academy of Sciences USA* 104 (2007): 7367–72.
———. "Late Pleistocene Adult Morality Patterns and Modern Human Establishment." *Proceedings of the National Academy of Sciences USA* 108 (2011): 1267–71.
———. "Modern Human versus Neanderthal Evolutionary Distinctiveness." *Current Anthropology* 47(2006): 597–608.
Truitt, Willis H. "Ideology, Expression and Mediation." *Philosophical Forum* 3 (1972): 468–97.
———. "Towards an Empirical Theory of Art: A Retrospective Comment on Max Raphael's Contribution to Marxian Aesthetics." *British Journal of Aesthetics* 11 (1971): 220–34.
Turner, Fredrick. *In the Land of Temple Caves: From St. Emillion to Paris's St. Sulpice*. New York: Counterpoint, 2004.
Tuttle, R. H., ed. *Paleoanthropology, Morphology and Paleoecology*. The Hague: Mouton, 1975.
Ucko, Peter J. "Débuts illusoires dans l'Étude de la Tradition artistique." *Bulletin de la Société Préhistorique Ariège-Pyrénées* 42 (1987): 15–81.
———, ed. *Form in Indigenous Art: Schematisation in the Art of Aboriginal Australia and Prehistoric Europe*. Canberra: Australian Institute of Aboriginal Studies, 1977.

———. *Theory in Archeology: A World Perspective*. London: Routledge, 1995.
Ucko, Peter J., and Andrée Rosenfeld. *Paleolithic Cave Art*. New York: McGraw-Hill, 1967.
Valladas, H., A. Quiles, M. Delque-Kolic, E. Kaltnecker, C. Moreau, E. Pons-Branchu, L. Vanrell, M. Olive, and X. Delestre. "Radiocarbon Dating of the Decorated Cosquer Cave (France)." *Radiocarbon* 59 (2017): 621–33.
Valladas, Hélène, J. Clottes, J.-M. Geneste, M. A. Garcia, M. Arnold, H. Cashier, N. Tisnérat-Laborde. "Evolution of Prehistoric Art." *Nature* 413 (October 2001): 479.
Vertes, L. "Churinga de Tata (Hongrie)." *Bulletin de la Société préhistorique française* 56 (1959): 604–11.
Vitebsky, Piers. *The Shaman: Voyages of the Soul.* London: Macmillan, 1995.
Voegelin, Eric. *Anamnesis: On the Theory of History and Politics*. Vol. 6 of *The Collected Works of Eric Voegelin*. Edited by David Walsh. Columbia: University of Missouri Press, 2002. [Hereafter cited as *CWEV* by volume.]
———. *Autobiographical Reflections, Revised Edition, With a Voegelin Glossary and Cumulative Index*. Vol. 34 of *CWEV*. Edited by Ellis Sandoz. Columbia: University of Missouri Press, 2006.
———. *The Drama of Humanity and Other Miscellaneous Papers, 1939–1985*. Vol. 33 of *CWEV*. Edited by William Petropulos and Gilbert Weiss. Columbia: University of Missouri Press, 2004.
———. *The Ecumenic Age*. Vol. 4 of *Order and History*. Vol. 17 of *CWEV*. Edited by M. Franz. Columbia: University of Missouri Press, 2000.
———. *The History of the Race Idea from Ray to Carus*. Vol. 3 of *CWEV*. Translated by Ruth Hein. Edited by Klaus Vondung. Baton Rouge: Louisiana State University Press, 1998.
———. *In Search of Order*, Vol. 5 of *Order and History*. Vol. 18 of *CWEV*. Edited by Elli Sandoz. Columbia: University of Missouri Press, 2000.
———. *Israel and Revelation*. Vol. 1 of *Order and History*. Vol. 14 of *CWEV*. Edited by Maurice P. Hogan. Columbia: University of Missouri Press, 2001.
———. *Modernity without Restraint: The Political Religions; The New Science of Politics; Science Politics and Gnosticism*. Vol. 5 of *CWEV*. Edited by Manfred Henningsen. Columbia: University of Missouri Press, 2000.
———. *Published Essays, 1940–1952*. Vol. 10 of *CWEV*. Edited by Ellis Sandoz. Columbia: University of Missouri Press, 2000.
———. *Published Essays, 1953–1965*. Vol. 11 of *CWEV*. Edited by Ellis Sandoz. Columbia: University of Missouri Press, 2000.
———. *Published Essays, 1966–1985*. Vol. 12 of *CWEV*. Edited by Ellis Sandoz. Baton Rouge: Louisiana State University Press, 1990.
———. *Race and State*. Vol. 2 of *The Collected Works of Eric Voegelin*. Translated by Ruth Hein. Edited by Klaus Vondung. Baton Rouge:

Louisiana State University Press, 1997.
———. *Selected Correspondence, 1950–1984.* Vol. 30 of *CWEV*. Edited by Thomas A. Hollweck. Columbia: University of Missouri Press, 2007.
———. *What Is History? And Other Late Unpublished Writings*. Vol. 28 of *CWEV*. Edited by Thomas A. Hollweck and Paul Caringella. Baton Rouge: Louisiana State University Press, 1990.
———. *The World of the Polis*. Vol. 2 of *Order and History*. Vol. 15 of *CWEV*. Edited by Athanasios Moulakis. Columbia: University of Missouri Press, 2000.
von Petzinger, Geneviève. *The First Signs: Unlocking the Mysteries of the World's Oldest Symbols*. New York: Atria Books, 2016.
von Petzinger, Geneviève, and April Nowell, "A Question of Style: Reconsidering the Stylistic Approach to Dating Paleolithic Parietal Art in France." *Antiquity* 85 (2011): 1165–83.
Waller, Steven J. "Sound Reflection as an Explanation for the Content and Context of Rock Art." *Rock Art Research* 10 (1993): 91–101.
Walsh, David. *The Modern Philosophical Revolution: The Luminosity of Existence*. Cambridge: Cambridge University Press, 2008.
White, R. "Beyond Art: Toward an Understanding of the Origins of Material Representation in Europe." *Annual Review of Anthropology* 21 (1992): 537–64.
Whitley, David S. *Cave Paintings and the Human Spirit: The Origins of Creativity and Belief*. Amherst, NY: Prometheus Books, 2009.
———. "Rediscovering French Ice-Age Art." *Nature* 320 (April 1986): 683–84.
———. "Visual Thinking in the Ice Age." *Scientific American* 261 (July 1989): 92–99.
Wightman, Gregory J. *The Origins of Religion in the Paleolithic*. Lanham, MD: Rowman and Littlefield, 2015.
Wilson, Holly L. *Kant's Pragmatic Anthropology: Its Origin, Meaning and Critical Significance*. Albany: SUNY Press, 2006.
Wintle, A. G. "Dating Tautavel Man." *Nature* 304 (July 1983): 118–19.
Wooley, Leonard. *The Beginnings of Civilization*. New York: Harper and Row, 1963.
Wrangham, Richard. *Catching Fire: How Cooking Made Us Human*. New York: Basic Books, 2009.
Wylie, Alison. "The Reaction against Analogy." *Advances in Archaeological Method and Theory* 8 (1985): 63–111.
Wymer, John. *The Paleolithic Age*. London: Croom Helm, 1969.
Wynn, Thomas, and Frederick L. Coolidge. *How to Think Like a Neanderthal.* Oxford: Oxford University Press, 2012.
Zaehner, R. C. *Drugs, Mysticism and Make-Believe*. London: Collins, 1972.
———. *Mysticism Sacred and Profane: An Inquiry into Some Varieties of Praeternatural Experience*. Oxford: Oxford University Press, 1957.
Zammito, John. *Kant, Herder and the Birth of Anthropology*. Chicago: University of Chicago Press, 2002.
———. "'This inscrutable *principle* of an original *organization*': Epigenesis

and ‘looseness of fit’ in Kant’s Philosophy of Science.” *Studies in History and Philosophy of Science* 34 (2003): 73–109.

Zöller, Günter, and Robert B. Louden, eds. *Immanuel Kant: Anthropology, History and Education.* Cambridge: Cambridge University Press, 2007.

Züchner, Christian. “Animals as Symbols in European Paleolithic Art.” In *Prehistoric Art and Ideology*, edited by E. Anati, 121–23. Oxford: Archeopress, 2008.

———. “The Chauvet Cave: Radiocarbon versus Archaeology.” *International Newsletter of Rock Art* 13 (1996): 25–27.

———. “Comments and Additional Remarks on the Paper by Jean Combier and Guy Jouve: New Investigations into the Cultural and Stylistic Identity of the Chauvet Cave and its Radiocarbon Dating.” *L’Anthropologie* 118 (2014): 186–87.

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